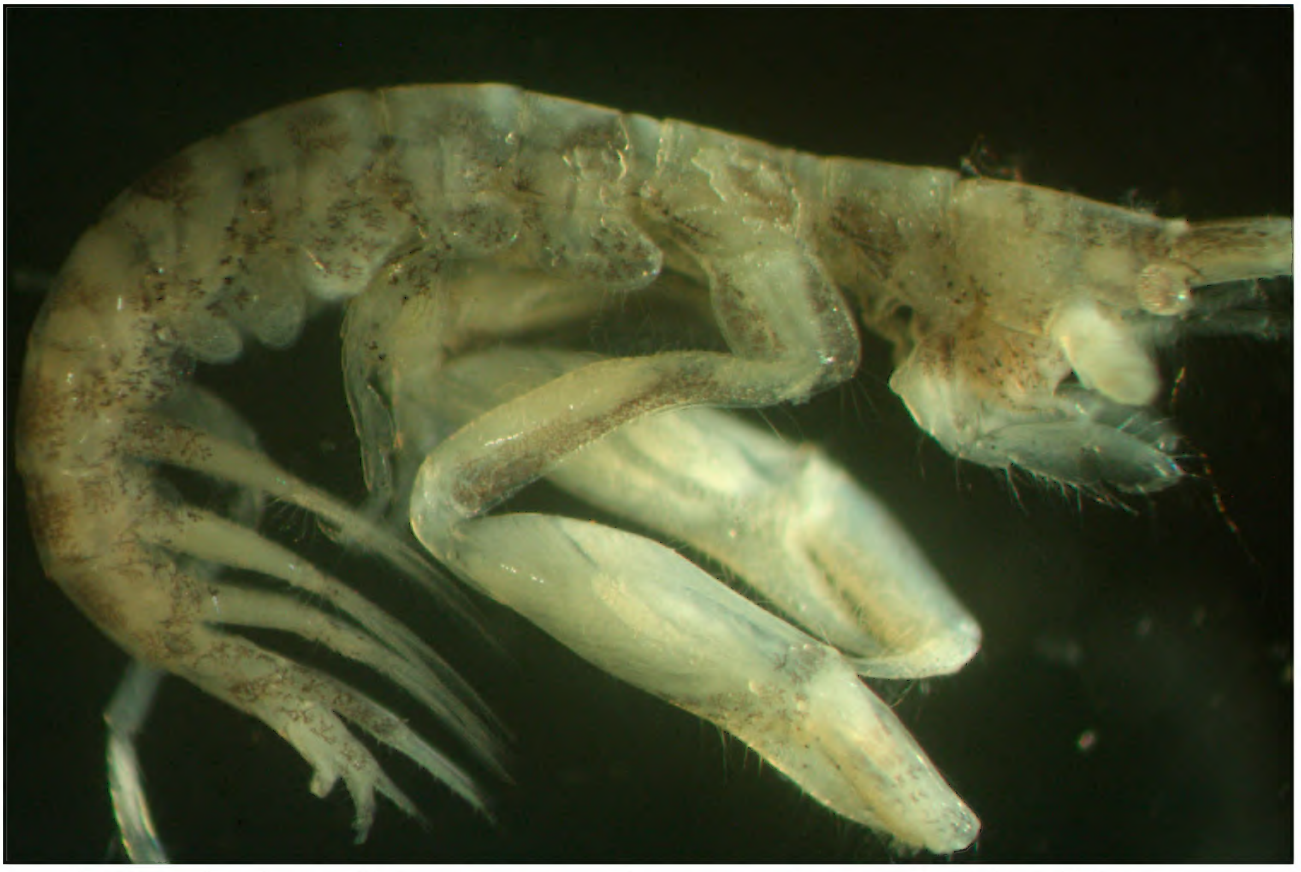
SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS

May–August 2021 SCAMIT Newsletter Vol. 40 No. 1&2



Ericthonius brasiliensis - Male specimen collected from a settling plate in San Diego Bay (NIWC Stn9 9Jul2021). Photo by D. Pasko.

This Issue

10 MAY 2021 ECHINODERM TOOLBOX REVIEW, LEAD M. LILLY, ZOOM 2
14 JUNE 2022, ARTHROPODS, LEAD D. PASKO, ZOOM 3
23 AUGUST 2021, PROBLEMATIC POLYCHAETES – PART 2, LEAD L. HARRIS, ZOOM 5
REFERENCES 8
SCAMIT OFFICERS 9

The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes

Publication Date: February 2023

10 MAY 2021 ECHINODERM TOOLBOX REVIEW, LEAD M. LILLY, ZOOM

Attendance: Don Cadien, Terra Petry, Chase McDonald, Jovairia Loan, Brent Haggin, LACSD; Mary Wicksten, Texas A&M; Megan Lilly, Andrew Davenport, CSD; Erin Oderlin, Greg Lyon, CLAEMD; Angelica Zavala Lopez, MTS; Ernie Ruckman, OCSD; Erica Keppel, Smithsonian.

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the most current meetings announcements.

Kelvin started by giving an overview of his database meeting with Wi-Lin. One of the major take-aways from the meeting was that, initially, we should concentrate on basic functionality allowing the species list to work online. We need to prioritize what is needed in terms of primary features as each additional feature will add complications and cost. To that end Kelvin will be asking members for input. For example, should we create an option for members to comment on the list, e. g., flag errors, make change suggestions, etc., online? Realistically money is going to be an issue with a quote ranging from10k to 100k; SCAMIT will need to find funding.

Danny Tang then gave a p-code update. He attended the CTAG meeting last week (May 2021) where the issues of p-codes were raised. He asked Ken Schiff if SCCWRP was using Edition 5 in their tool. Ken said, "no", they are updating the tool with every Bight cycle. Don noted that it is the SQO that is tied to Ed 5. Greg Lyon pointed out, however, that SCCWRP has a calculator on their website and it uses Ed 5. Ken agreed that SCCWRP could facilitate a p-code discussion if needed. They are amenable to assisting but not leading. It was asked that Don or Wendy attend a CTAG meeting in the future to discuss revitalizing the BATMAN (SCCWRP Benthic AssessmenT MANagement) group and harmonization of p-codes and why it is needed. Don mentioned that this is a CTAG concern since the p-codes and BRI are featured in regulatory control over programs and keeping them up to date is important. The POTW group has an interest in maintaining p-codes and have been doing so as individual agencies but have not coordinated their efforts since BATMAN stopped meeting. Subsequently, the agencies' p-codes have probably diverged; it would be a good idea to get back to a coordinated effort. Danny stated that BATMAN ran a test in 2010 of datasets from various agencies and the results were not inconsequential and pointed to a need for coordination. This doesn't necessarily have to happen through SCCWRP. Shelly Walther (LACSD) offered to take charge if needed instead of asking Dave Gillette (SCCWRP). Danny then asked who uses the SCCWRP tool? Greg noted that CLAEMD uses their web-based calculation tool and in order to do so they have had to add an "Ed 5 name" field to their internal species list. Problems arise if they add a new species as they have to determine what Ed 5 name would or would not apply to that taxon; it needs to have a "BRI name".

Megan started the taxonomy portion of the day noting that it was going to be focused on reviewing the echinoderm portion of the Toolbox but that if people had questions regarding problematic species, to please raise them.

She shared her protocol for identifying juvenile ophiuroids and offered to send it to other agencies for review.

There was a question about the Holothuroidea species *Ypsilothuria bitentaculata*. This animal has been recorded by CSD from B'13, B'18 and a CSD Regional station, with all occurrences being >500 m. Megan offered to create an ID sheet for the species.

Questions arose about the creation of provisional species *Amphioplus* sp A. Megan has scanned a hard copy of the original descriptive email by Lisa Haney in 2003. A copy of it is attached at the end of this newsletter.

14 JUNE 2022, ARTHROPODS, LEAD D. PASKO, ZOOM

Attendance: Brent Haggin, Don Cadien, Chase McDonald, LACSD; Dean Pasko, DCE; Craig Campbell, JoAnne Linnenbrink, CLAEMD; Danny Tang, OCSD; Katie Beauchamp, CSD; Angelica Zavala Lopez, MTS; Dany Burgess, WADOE.

The meeting opened with Brent turning over control of the Zoom meeting to Dean as there was little SCAMIT business to relate to the small group of arthropod taxonomists in attendance.

Dean then began the meeting by discussing local *Nebalia* spp of the Order Leptostraca. Craig Williams and JoAnne Linnenbrink had raised the question of how to distinguish *N. hessleri* from other potential species. This problem had also bothered Dean. He shared an ID sheet and key to species. In short, there are three taxa potentially present in the SCB: *N. daytoni, N. hessleri*, and *N. pugettensis* Cmplx. Dean discussed the ID sheet (a collage of images of the described species) and reviewed the characters of the key used to distinguish the three local species (eye shape, body size, articles on antenna 1 flagellum, and number of robust spines present on article 4 of the antennule). The two other species formally described from northern California include *N. kensleyi* and *N. gerkenae*. These two species are quite easily differentiated by the length of the caudal furca relative to the telson, along with the shape of the posterior marginal teeth of the pleonites, broad and rounded relative to thin and strongly tapering, respectively. Neither of these species is yet reported from Southern California and were presented for comparative purposes.

Dean then moved into a discussion of an uncommon group of lysianassoid amphipods, *Abyssorchomene* (Lysianassoidea: Lysianassidae), which had been collected in several deep-water Bight'18 samples but is not included in Ed 13. *Abyssorchomene* is not included in Dean's 2018 key to SCB lysianassids, and *Abyssorchomene* specimens would key to one or more species of *Orchomene*. However, Don Cadien (2007) included the genus in his 100+page overview of the Lysianassoids and the genus is clearly identified in his included key to the genera. *Abyssorchomene* can be distinguished from *Orchomene* and other closely related genera by the presence of small but distinct humps along the postero-dorsal margin of pereonites 1–7 and pleonites 1–2 along with blunt, mammiliform eyelobe. There are three described species from the NEP, and potentially two other provisional species that have yet to be fully fleshed out (see Cadien 2007). Dean provided the group a multi-page handout that included Don's discussion of the genus, and several figures pages representing the three described species of *Abyssorchomene* (*A. abyssorum*, *A. distinctus*, *A. gerulicorbis*) highlighting the characters that distinguish each from the most closely aligned *Orchomene* taxa (*O. anaquelus*, *O. limodes*, *O. obtusa*). Everyone was cautioned that they should reference this material if they encounter specimens that they believe to be members of the *Orchomene* group from deeper waters (>700m) since that is where they are more likely to encounter *Abyssorchomene*. [**Note**: Dean has subsequently revised his key to include *Abyssorchomene*, as well as another recently encountered lysianassoid covered in Don's review, *Shoemakerella ?cubensis* of the family Lysianassidae. Four specimens of this taxon were collected on settling plates within Alamitos Bay Marina in Long Beach, and one in Cat Harbor, Catalina Island. The "?" ahead of the species designates Dean's inability to confirm the specific identification, but after discussing the find with Don, Dean feels quite confident of the generic identification.]

Publication Date: February 2023

Sticking with amphipods, Dean introduced a new key to the SCB *Ericthonius* (Corophiida: Photoidea: Ischyroceridae). Dean had recently encountered one of his old provisional species, *Ericthonius* sp SD1 in a set of shallow water samples from the Chevron Refinery discharge off Dockweiler Beach in the Santa Monica Bay. He had not seen the species in a while and took the opportunity to clarify how this species relates to other reported *Ericthonius* and share this information with the City of Los Angeles staff, who also process samples from Santa Monica Bay. For example, Dean had not originally noted that this species also has unpigmented eyes, like Don's *Ericthonius* sp A from northern California. The two taxa are easily distinguished by the presence of a vestigial endopod on uropod 3 in *Ericthonius* sp A which is absent from *Ericthonius* sp SD1. Don acknowledged that the presence of an endopod, vestigial as it may be, might place it into some other undetermined genus. The genus *Ericthonius* is defined, in part, by having a uniramus uropod 3. *Ericthonius* sp SD1 is similar to *E. brasiliensis* in that males of both species have a bifid defining tooth on gnathopod 2, but the two differ in overall size with *Ericthonius* sp SD1 being consistently less than 3 mm at maturity. In addition, *Erichthonius* sp SD1 differs from *E. brasiliensis* in the shape of the basis of gnathopod 1, length/width of the gnathopod 2 carpus, shape of uropod 3, and telson denticles, respectively.

Finally, Dean discussed his approach to working with SCB sphaeromatid isopods (Family Sphaeromatidae) from shallow water samples, particularly bays and harbors. Since many of the active members of SCAMIT come from the local monitoring agencies operating in coastal shelf waters, shallow water sphaeromatids are not often encountered. Since the Regional Bight Program has migrated to focus on embayments, some of these folks have encountered more of these diminutive, unfamiliar sphaeromatids, many of which are not covered in the most commonly used key, Stebbins (1999). Brusca et al (2007) key in Light's Manual is very clear and helpful, even in Southern California. Dean emphasized the utility of this resourceful key and explained one of the more useful characters used in the key, pleated vs. non-pleated pleopods. Don reminded everyone that Regina Wetzer (NHMLAC) and others have put out several recent sphaeromatid papers that everyone should become familiar with. Many of these are cited in the References section of this newsletter. Dean shared his *Gnorimosphaeroma* ID sheet (thankfully Don was present on the call to correctly pronounce this genus), which includes a key from Wetzer, et al. (2021) addressing *Gnorimosphaeroma oregonense* and other members of the genus.

Dean also introduced us to some problem crabs he encountered in SCB embayments. They appeared to be panopeids (Decapoda: Xanthoidea: Panopeidae), but not *Lophopanopeus*, despite appearances. They don't fit any of the local *Lophopanopeus* species, and when the male gonopod is examined, are not members of *Lophopanopeus* at all. It is more likely they are *Micropanope* (Decapoda: Xanthoidea: Xanthidae) although the structure of the gonopod does not match any of the described *Micropanope* either. Dean has separated out two similar taxa that differ in carapace morphology, treating them as "panopeid 1" and "panopeid 2", but has been unable to resolve their identity. It is possible that these represent an invasive species currently making entry into our waters. Dean said that Dr. Mary Wicksten (Texas A&M University) has agreed to examine the material and will undoubtedly have a useful analysis to add once she does. Stay tuned and be thankful our usual monitoring is offshore and beyond the many difficulties of working in embayments and particularly with fouling communities.

Most of the discussed ID aids, keys, sheets, etc, are attached at the end of this newsletter.

JULY 2021 – NO MEETING DUE TO FIELD SAMPLING

23 AUGUST 2021, PROBLEMATIC POLYCHAETES – PART 2, LEAD L. HARRIS, ZOOM

Attendance: Brent Haggin, Bill Furlong, Christine Boren, Norbert Lee, LACSD; Leslie Harris, NHMLAC; Adam Webb, Ricardo Lara, Veronica Rodriguez, CSD; Ashley Loveland, Diane O'Donohue, Heather Peterson SFPUC; Greg Lyon, CLAEMD; Kelvin Barwick, OCSD; Theresa Diaz, MBC; Larry Lovell, Tony Phillips, DCE; Rod Velasquez, Angelica Lopez, MTS; Chip Barret, EcoAnalyst; Tom Biksey, retired; Dot Norris, retired.

Norbert presented on a specimen of what he thought might be an *Arctonoe* in the Family Polynoidea. Attendees suggested it may be a *Lepidasthenia.* Norbert will work on getting some better images.

Veronica presented a possible new SCAMIT record for *Goniadopsis* sp (Family Goniadidae):

- anterior parapodia uniramous, posteriorly biramous
- 1 kind of probiscideal organ
- Without chevrons
- Long ventral cirri.

Leslie suggested checking for damage to the proboscis to determine if the chevrons are lacking or if the animal lost its chevrons.

Adam presented more images of his problematic *Anotomastus* (Family Capitellidae). Kelvin provided images of *Anotomastus gordiodes* for comparison. Leslie said it was different and Adam should erect a provisional species.

Leslie presented material on the following species:

Within the Family Terebellidae *Pista pacifica* is listed as *Pista cf pacifica* Ed 13. Leslie provided images of confirmed local specimens of *Pista pacifica*. Therefore, it is proposed that the "*cf*" designation be removed from future species lists. Good characters to separate this species from others include:

- large uncini in anterior chaetigers
- 3 pairs of branchiae
- multiple pairs of nephridia

Within the Family Lumbrineridae, *Scoletoma luti* has been reported from both San Francisco Bay and shallow bays and harbors of southern California. It is most likely to only be encountered during Bight sampling. This species has long post-setal lobes which extend beyond the chaete in the posterior chaetigers and the worm is long and thin (30 X 0.5 mm). Also found in shallow water, bays and harbors are *Scoletoma* sp A, *Scoletoma* sp B and *Scoletoma* sp C. All three were described as SCAMIT species by L. Lovell in 2001. These are separated by the starting chaetiger of the hooded hooks, the length of the pre- & post-chaetal lobes of the posterior chaetigers and the presence of a sensory palpode on the tip of the prostomium.

Publication Date: February 2023

Glycinde sp SF1 (Family Goniadidae) – this organism is pale, yellow-greenish and has 2 types of probiscideal papillae (1 row of "duck feet" & 1 row of "cigar" shaped). Compared to *Glycinde picta* which has brown banding and 1 type of proboscideal organ (2 rows of "duck feet").

Malmgreniella macginitiei (Family Polynoidea) – Leslie presented images of freshly preserved specimens that still retained most of their pigment.

In the Family Phyllodocidae a comparison of three species of *Phyllodoce* were presented. Perhaps *Phyllodoce multipapillata* should be more on our radar. The three species discussed were:

Phyllodoce cuspidata

- no pigment on tentacular segments
- dorsal banding incomplete
- anterior with paired ventral dots
- proboscis with abrupt papillae transition

Phyllodoce multipapillata (= Phyllodoce sp SF2*)*

- with pigment on tentacular segments
- dorsal banding complete
- without paired ventral dots
- proboscis with gradual papillae transition

Phyllodoce sp SF3

- no pigment on tentacular segments
- dorsal banding incomplete
- without paired ventral dots
- proboscis with abrupt papillae transition

Next up was the Family Orbiniidae. *Scoloplos* sp SF1 was revisited and determined to be a valid provisional. Brent will update his Orbiniid key and redistribute. *Leitoscoplo*s sp SF1 was presented. It has very long abdominal neuropodia. Brent suggested checking the posterior thoracic neuropodia for the number of post-chaetal processes and for the presence of the ventral pigment cluster/band in the anterior thorax to determine if it is a current provisional.

For the Family Magelonidae Leslie presented a table and images to show that most of the local *Magelona* spp can be ID'd using only the notopodial and neuropodial lamellae, and the chaetal arrangement is not necessary for most of the species.

Within the Family Maldanidae *Euclymeninae* sp B appears to be fairly common in San Francisco Bay and may be a central California species. Easily ID'd by the rectangular pigment patch on chaetiger 7. Along the same lines, Kelvin asked about *Euclymeninae* sp SF2 and it was determined that it was actually *Petaloclymene pacifica.*

In the Family Capitellidae the two species, *Capitella teleta* and *Capitella capitata* Cmplx, were discussed. While the prostomium of *C. teleta* is somewhat distinctive compared to *C. capitata*

Cmplx, due to the overall variability within the *C. capitata* Cmplx and the need for DNA to confirm the presence of *C. teleta*, it is suggested that *C. capitata* Cmplx be the applied name. Below are some of the characters that can be useful to separate the species within the complex:

- prostomium smooth or annulated
- peristomium complete or incomplete
- total number of chaetigers
- number of capillary chaetigers
- number of chaetigers with hooded hooks
- genital spines in males or females or both

Next up for discussion were *Pseudopotamilla socialis* vs. *Pseudopotamilla* sp 1 Fitzhugh 1993 in the Family Sabellidae. *P. socialis* is typically found on hard substrates. The color of the crown and placement of the eyes is distinctive. *Pseudopotamilla* sp 1 is a soft-bottom organism and is likely the common *Pseudopotamilla* found in local SCAMIT samples.

The move of two genera within the Family Ampharetidae, *Sabellides* and *Asabellides,* into the genus *Ampharete* was discussed. These genera have previously been separated based on the presence or absence of palae and the number of thoracic chaetigers. Jirkov (2011), and numerous others have shown that size and number of palae are highly variable for this group. The presence or absence of palae within populations varies. These groups are now aligned based on the buccal tentacles being pinnate and a prostomium without glandular ridges, among other characters.

Also, in the Family Ampharetidae, our local records of *Ampharete acutifrons* is most likely a complex based on the starting chaetiger of the prolonged dorsal cirrus. Leslie is working on a character table to determine the number of local provisional species and proposes to stop using the name *A. acutifrons* for local species. Also, using the description of *A. acutifrons* in the MMS Atlas (Hilbig, 2000; pp 180 -182, fig, 8.3) should be avoided as it was based on the original description of the European species and a single specimen from central California.

The recent changes within the Family Eunicidae were discussed. The genus *Eunice* was recently split into *Eunice* and *Leodice*.

- *Leodice antenatta* is likely not present locally. Check instead *Leodice lucei.*
- *Leodice valens* is likely a northern California species.

The genus *Marphysa* (Family Eunicidae) was recently split into *Marphysa* and *Paucibranchia.* Both of these genera lack peristomial cirri but are separated based on the branchiae being present only on a limited number of anterior chaetigers in *Paucibranchia.*

- *Marphysa californica* (= *Marphysa* sp C Harris 2003) is a valid species that was recently removed from synonymy with *Marphysa sanguinea* Cmplx.
- *Marphysa stylobranchia* needs a redescription.

Local records of the genus *Lysidice,* also in the Family Eunicidae, are likely mis-identified juveniles as the number of prostomial antennae and the presence of peristomial cirri, both defining characters, are growth and size related.

Publication Date: February 2023

REFERENCES

Bruce, N. L. and R. Wetzer 2004. *Paradella tiffany* sp. nov., a distinctive sphaeromatid isopod (Crustacea: Isopoda: Sphaeromatidea) from Baja California, Mexico. Zootaxa 623: 1-12.

Brusca, R. C., V. Coelho and S. Taiti. 2007. Isopoda. In: The Light and Smith Manual: Intertidal Invertebrates from Central California to Oregon, 4th edition (Carlton JT, ed.). University of California Press, Berkeley, CA p. 503-542.

Cadien, D.B. 2007. Amphipoda of the Northeast Pacific (Equator to Aleutians, intertidal to abyss): XV. Lysianassoidea – an updated and revised review. (Revised 29Mar2015)

Jirkov, I. A. 2011. Discussion of taxonomic characters and classification of Ampharetidae (Polychaeta), Italian Journal of Zoology, 78:sup1, 78-94.

Hilbig, B. 2000. Family Ampharetidae Malmgren, 1867. In: Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel Volume 7 – The Annelida Part 4 Polychaeta: Flabelligeridae to Sternspidae. Blake, J.A., Hilbig, B., Scott, P.V. eds. pp. 384.

Pasko, D. 2018. Artificial Key to the Lysianassoidea Reported from the Southern California Bight, SCAMIT, Edition 11.

Stebbins, TD. 1999. Key and Notes to the Marine Isopods (Crustacea: Isopoda) Known from Coastal Shelf Bottoms in the Southern California Bight. August 1999.

Wall, A. R., N.L. Bruce, R. Wetzer. 2015. Status of *Exosphaeroma amplicauda* (Stimpson, 1857), *E. aphrodita* (Boone, 1923) and description of three new species (Crustacea, Isopoda, Sphaeromatidae) from the north-eastern Pacific. ZooKeys 504: 11-58.

Wetzer, R. and N. L. Bruce. 2007. A new species of Paradella Harrison & Holdich, 1982 (Crustacea: Isopoda: Sphaeromatidae) from Baja California, Mexico, with a key to East Pacific species. Zootaxa 1512: 39-49.

Wetzer, R. and G. Mowery. 2017. Redescription of *Dynoides elegans* (Boone, 1923) (Crustacea, Isopoda, Sphaeromatidae) from the north-eastern Pacific. ZooKeys 646: 1-16.

Wetzer, R., A. Wall, N.L. Bruce. 2021. Redescription of *Gnorimosphaeroma oregonense* (Dana, 1853) (Crustacea, Isopoda, Sphaeromatidae), designation of neotype, and 16S-rDNA molecular phylogeny of the north-eastern Pacific species. ZooKeys 1037:23-56.

Please visit the SCAMIT Website at: www.scamit.org

SCAMIT OFFICERS

If you need any other information concerning SCAMIT please feel free to contact any of the officers at their e-mail addresses:

President	Brent Haggin	(562)908-4288 x 5672	bhaggin@lacsd.org
Vice-President	Leslie Harris	(213)763-3234	lharris@nhm.org
Secretary	Megan Lilly	(619)758-2336	mlilly@sandiego.gov
Treasurer	Erin Oderlin	(310)648-5477	erin.oderlin@lacity.org

SCAMIT is a 501(c)(3) charity. The newsletter is published every two months and is distributed freely to members in good standing. Membership is $20 for an electronic copy of the newsletter, available via the web site at www.scamit.org, and $35 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $65. All correspondences can be sent to the Secretary at the email address above or to:

SCAMIT
PO Box 50162
Long Beach, CA 90815

Amphioplus sp A - 2003 Haney descriptive email

From: "Lisa Haney" <lhaney@lacsd.org>
To: "Bight list-server (E-mail)" <b03taxon@sccwrp.org>, "listserve SCAMIT (E-mail)" <SCAMIT@lserve.sbnature2.org>
Date: 12/30/2003 10:39 AM
Subject: [b03taxon] Discussion of specific ophiuroids (status ofAmphioplus hexacanthus)

Sorry for the cross-posting, I just want to ensure that this information was available to everyone.

I wanted to take a moment to present some findings on what has seemed to be a confusing subject for many concerning the status of Amphioplus hexacanthus. In a recent SCAMIT newsletter, Megan Lily reiterated the confusion in her ophiuroid article and solicited additional commentary. So here it is!

Without doubt, Amphioplus hexacanthus is a nomen dubium. (Not a valid name due to lack of complete type material and inability to distinguish it as something different)

History of Amphioplus hexacanthus: The type material was not sufficient to represent this as a new species and was therefore synonomized with Dougaloplus amphacanthus. The type material was lacking individuals with disks. Without disks the individuals could not be distinguished as different from D. amphacanthus. It was synonomized with Dougaloplus amphacanthus because of the forked tentacle spines found centrally along the arms. With the information at hand at that time, the only known species to have forked tentacle spines was D. amphacanthus, so the synonymy was appropriate. However, with recent information on a new species with a scaled disk and forked central arm spines, it is my recommendation that the synonymy be revoked and the name Amphioplus hexacanthus be designated as a nomen dubium. Either way the name Amphioplus hexacanthus is unavailable and would not be appropriate to use in an identification of any kind.

Another source of confusion seems to be the distinction between the two genera Dougaloplus and Amphioplus. Here are the basic diagnostic characters for each:

Amphioplus:

A pair of infradental papillae at tip of jaw and 3 or 4 oral papillae at each side.
Deeper in the mouth slit, on either side of the infradental pair, is a supplementary papilla (Buccal scale)
Of the lateral papillae, 1 or 2 emerge from the adoral shield.
Outermost oral papilla very small, not opercular
The disk is scaled, no spinelets.

Radial shields always divergent.
Arms very long and brittle with 3-6 spines on both sides of each joint
Tentacle scales vary from 1-2.

Dougaloplus:

Disk covered with fine imbricating scales and scattered spines.
Radial shields usually divergent, sometimes separated from each other.
Four or five pairs of oral papillae.
Apical infradental pair arise from dental plate and the outermost pair from the adoral shield.
Deeper in the mouth slit, on either side of the infradental pair, is a supplementary papilla (Buccal scale)
Arms long and slender, flattened with 3-6 arm spines
1-2 leaf-like tentacle scales.

In a nutshell.... the two genera are very similar and are really only separated by the morphology of the disk, with Dougaloplus having scales and spines while Amphioplus possesses only scales.

The forked arm spines found in Dougaloplus amphacanthus are a species level character.

As most of us already know, there is a species that looks pretty much exactly like Dougaloplus amphacanthus but it has a scaled disk. After extensive review of the collections at the Natural History Museum and review of voucher material from LACSD, I would like to comment on the status of this species.

First of all, I wanted to determine the variability of tentacle morphology in both Dougaloplus amphacanthus and Amphioplus strongyloplax through all life stages. Indeed, forked arm spines and a disk with scales and spines are present in all individuals of D. amphacanthus with disk diameters of 3 mm or greater. In no observed specimens of any size were forked arm spines present in Amphioplus strongyloplax.

So .....the presence of collected individuals that obviously possess characters from both of the aforementioned species might be somewhat confusing.

The individuals that we have been collecting in our surveys with a scaled disk but noticeable forked arm spines certainly represent a new species and the characters hold true for all specimens starting with a disk diameter of 3 mm. These are clearly differentiated from the other two species along the growth curve. Based on mouth parts and the morphology of the disk (scaled with no spinelets), this new species clearly belongs to genus Amphioplus. It looks very similar to Amphioplus strongyloplax but is differentiated by the presence of forked arm spines. LACSD is designating this as Amphioplus sp. LA 1 and I am currently taking many digital images and composing a corresponding voucher sheet for it. I hope to distribute this in late January for review and publish an article on this in the SCAMIT newsletter sometime in the near future.

A Key To *Nebalia** (Leptostraca: Nebaliidae)

D. Pasko, 12 June 2021

Adapted from Haney, T. J. Martin, and E. Vetter. 2007. Leptostraca. In Light's Manual, 4th Ed.)

1. Specimens from south of Point Conception, CA 2
– Specimens from north of Point Conception, CA.....4

2 Eyestalk distally truncate and acutely produced dorsally and ventrally; caudal furca shorter than telson + pleonite VII; pleonite IV with strong, acutely upturned distal tooth .....***N. daytoni***
– Eyestalk distally rounded or oblong; caudal furca equal to or longer than telson + pleonite VII; pleonite IV variously toothed 2

3. Specimen typically exceeds 6mm in total length, reaching to 15mm; antenna 1 flagellum with ≥14 articles, article 4 with 4 – 5 robust spines; caudal furca longer than telson + pleonite VII.....***N. hessleri***
– Specimen less than 6mm in total length; antenna 1 flagellum with ≤6 articles, article 4 with one robust spine; caudal furca subequal to telson + pleonite VII .... ***N. pugettensis Cmplx***

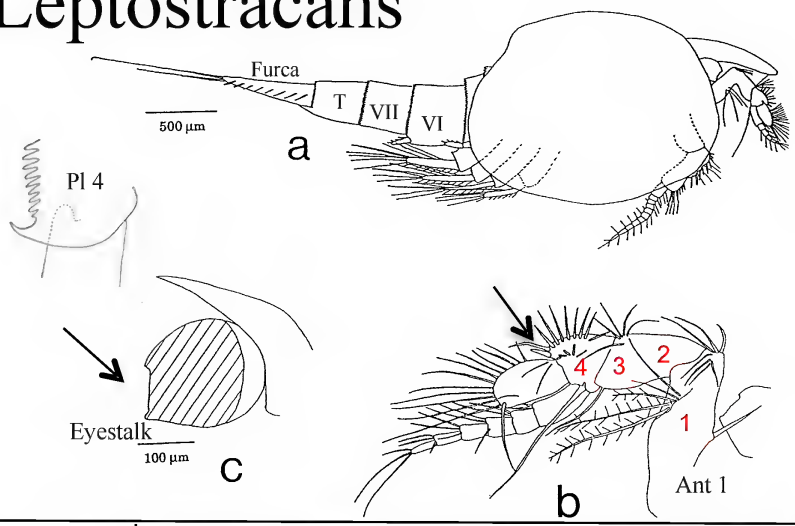
4. Caudal furca longer than telson + pleonite VII, terminal spines > cadual furca; posterior marginal teeth of pleonites wide, rounded; antenna 1, article 4 with 4 to 2-3 robust spines..... *N. kensleyi*
– Caudal furca longer subequal to telson + pleonite VII, terminal spines < cadual furca; posterior marginal teeth of pleonites pointed, but not distinctly narrowed, widely spaced, or strongly tapering; antenna 1, article 4 with 2 robust spines..... ..... *N. gerkenae*

---

* **bolded** taxa reported in SCAMIT, Edition 12

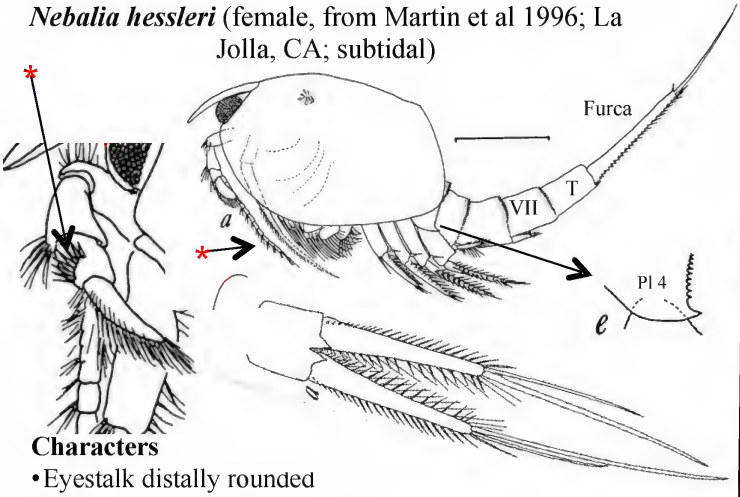
NEP Leptostracans

Nebalia daytoni (=*Nebalia* sp A SCAMIT)
(from Vetter 1996; La Jolla, CA; subtidal)



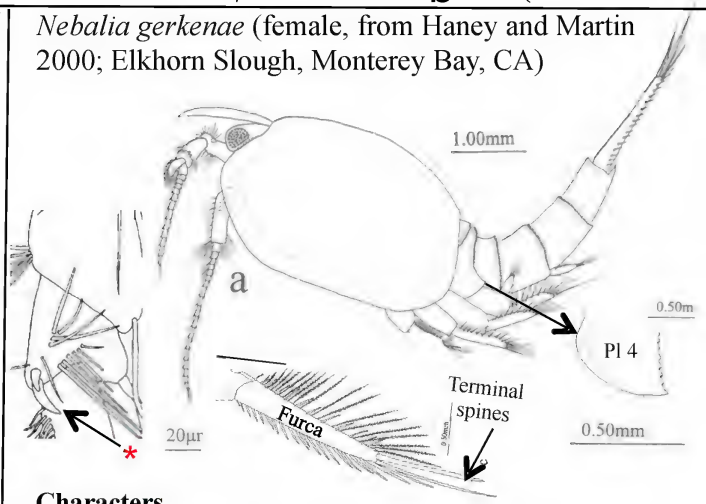
Characters
- Eyestalk distally truncate, distally produced both dorsally and ventrally
- Caudal furca < telson + Pl VII
- Pleonite IV with strong, upturned distal tooth
- Ant 1, Art 4 with 1 robust spine distally

Nebalia hessleri (female, from Martin et al 1996; La Jolla, CA; subtidal)



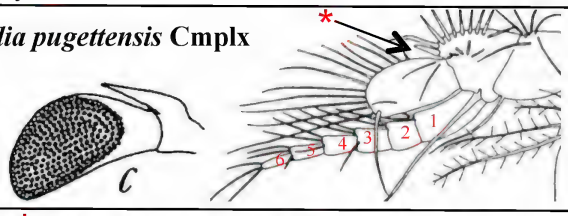
Characters
- Eyestalk distally rounded
- Caudal furca > telson + Pl VII
- Pleonite 4 with distal tooth
- Ant 1 flagellum with ≥14 articles; Art 4 with 3-5 robust spine distally*

Nebalia gerkenae (female, from Haney and Martin 2000; Elkhorn Slough, Monterey Bay, CA)

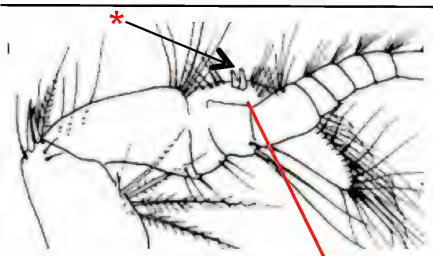


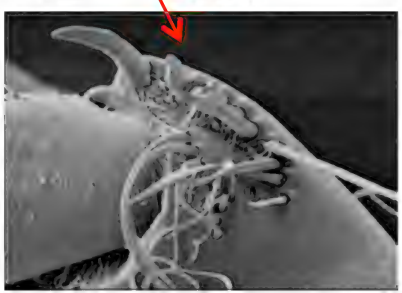
Characters
- Caudal furca ~ telson + Pl VII; terminal spines < furca
- Pleonite 6 strongly tapered posterior marginal teeth
- Ant 1, Art 4 with 2 robust spine distally*

Nebalia pugettensis **Cmplx**

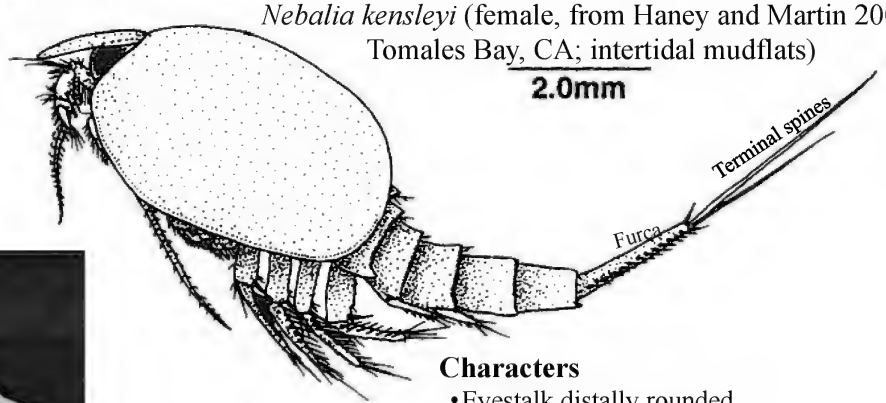


Characters
- Eyestalk elongate, oblong distally
- Caudal furca > short telson
- Pleonite 4 with distal tooth
- Ant 1, flagellum with ≤6 articles; art 4 with 1 robust spine distally*





Nebalia kensleyi (female, from Haney and Martin 2005; Tomales Bay, CA; intertidal mudflats)



Characters
- Eyestalk distally rounded
- Caudal furca > telson
- Pleonite 4 with distal tooth
- Ant 1, Art 4 with 2-3 robust spine distally*

D.Pasko
6/2021

Lysianassoidea: Uristidae: Abyssorchomene

(extracted from: Cadien, D.B. (2007) Amphipoda of the Northeast Pacific (Equator to Aleutians, intertidal to abyss): XV. Lysianassoidea – an updated and revised review. (Revised 29Mar2015)

Abyssorchomene – Created by De Broyer based on a cladistic analysis of the complex of species centered on *Orchomene*, this genus has two members in the NEP, and at least three others elsewhere (Bellan-Santini 1990). The NEP taxa are treated in J. L. Barnard and Ingram (1990) as *Orchomene* species, with *Abyssorchomene* relegated to subgeneric status. This placement is rejected here based on De Broyer's findings, and *Abyssorchomene* is viewed as a valid generic level taxon (see discussion under *Orchomene*). They characterize the taxon as having a mandibular molar like that of *Orchomene*, a maxilliped like that of *Orchomenella* and a gnathopod 1 like that of *Orchomenopsis*. This sort of structural convergence is one of the factors that convinced J. L. Barnard that more information was needed before the systematics of the lysianassids could be firmly established. His untimely death prevented further contributions by him to this resolution. The effort has been ongoing in the group of researchers led by Jim Lowry in Australia. The fact that both *Orchomene* and *Abyssorchomene* species have been regarded as congeneric at some point, highlights the difficulty of handing the lysianassoids at a family level. *Orchomene* and *Orchomenella* are currently placed among the tryphosine Lysianassidae, while *.homene* is among the uristids. Other genera have provided similar difficulties, and Lowry & Kilgallen (2014c) characterized the genus *Waldeckia* as being intermediate between the uristids and the tryphosines, having some characters of each. Both *A. abyssorum* and *A. distinctus* occur on abyssal plains, and were taken in association with hydrothermal venting areas in the NEP. A key to the genus worldwide is provided by Lowry & Kilgallen (2014b)

It is not clear if either of the three reported species are identical with the forms reported by France (1994) from the San Clemente Basin. His maintenance of two morphologically separable forms, *Abyssorchomene* sp. 1 and *Abyssorchomene* sp. 2 is suggestive, but must remain inconclusive. Since both were taken at significantly shallower depths than either of the three other species reported from the NEP, and in a different ecological context, it is more likely that they represent as yet unnamed species in the genus from the area.

Diagnostic description: "*Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum with an elongate article 1 (at least twice as long as article 2) partially covering callynophore. Antenna 2 with brush setae. Mandible molar setose with a triturating surface. Maxilla 1 outer plate a well developed 7/4 crown. Maxilla 2 inner plate slightly to significantly shorter than outer plate. Gnathopod 1 subchelate or parachelate; coxa 1 large, about as long as coxa 2, subrectangular with concave anterior margin or adze-shaped; ischium short (length less than 2 × breadth); carpus compressed; propodus margins subparallel. Uropod 2 inner ramus not constricted. Telson moderately to deeply cleft.*" (from Lowry & Kilgallen 2014b)

Barnard, J.L. and C.L. Ingram. 1990. Lysianassoid Amphipoda (Crustacea) from deep-sea thermal vents. *Smithsonian Contributions to Zoology* 499: 1-80.

France, S.C. 1994. Genetic population structure and gene flow among deep-sea amphipods, *Abyssorchomene* spp. from six California Continental Borderland basins. *Marine Biology* 118:67-77.

Shulenberger, E., and J.L. Barnard. 1976. Amphipods from an abyssal trap set in the North Pacific Gyre. *Crustaceana* 31(3): 241-258.

NEP Species:

Abyssorchomene abyssorum (Stebbing 1888) – South Atlantic, New Zealand, Galapagos; 550-4330m
Abyssorchomene distinctus (Birstein and Vinogradov 1960) – Palau to East Pacific Rise at 13°N; 2000-4732m
Abyssorchomene gerulicorbis (Shulenberger and J. L. Barnard 1976) – off Northern Baja California; 5720m

NOTE: The following pages attempt to highlight relatively easy to view morphological differences between *Abyssorchomene* listed above and the closely related members of the genus *Orchomene* also present in the SCB. Local taxonomists using D. Pasko's 2018 key to the SCB Lysianassids should be careful to compare specimens that key to *Orchomene* with the included identification aids for *A. abyssorum*, *A. distinctus*, and *A. gerulicorbis*, especially when identifying specimens from deep water.

Abyssorchomene abyssorum (Stebbing 1888) (from Barnard and Ingram, 1990);

Male = "s"; female = unattributed

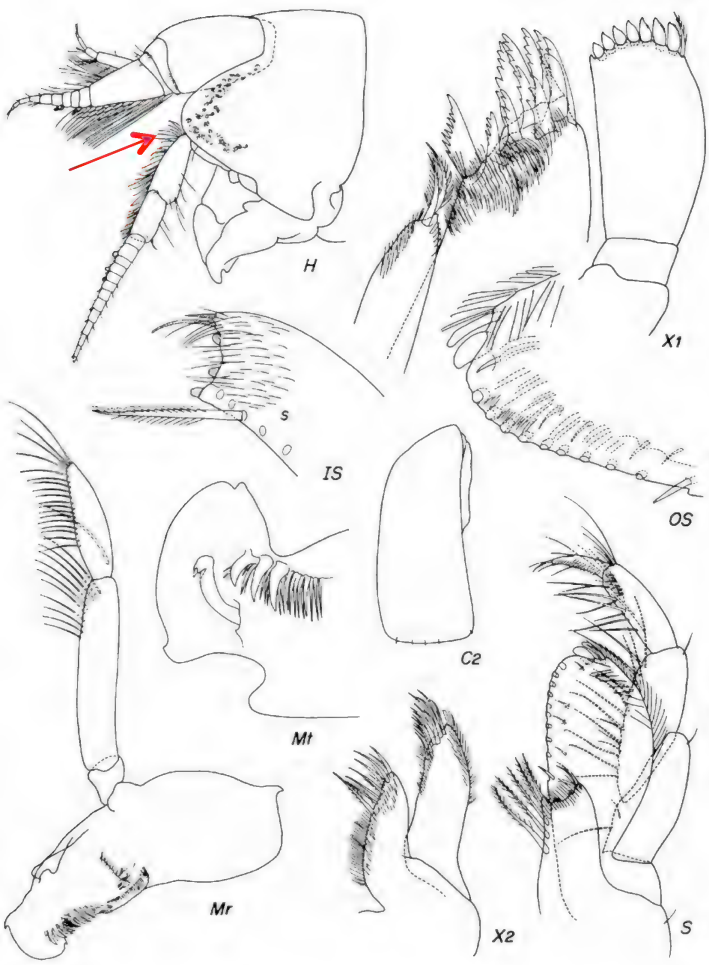


FIGURE 15.—*Orchomene abyssorum*, male "s" 6.41 mm.

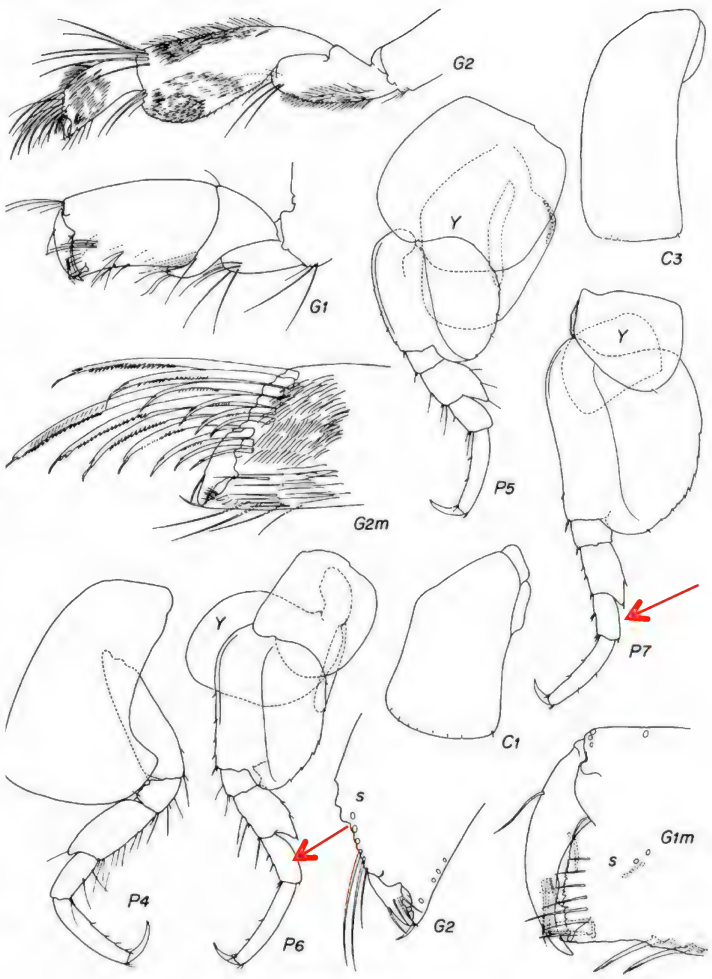


FIGURE 16.—*Orchomene abyssorum*, male "s" 6.41 mm.

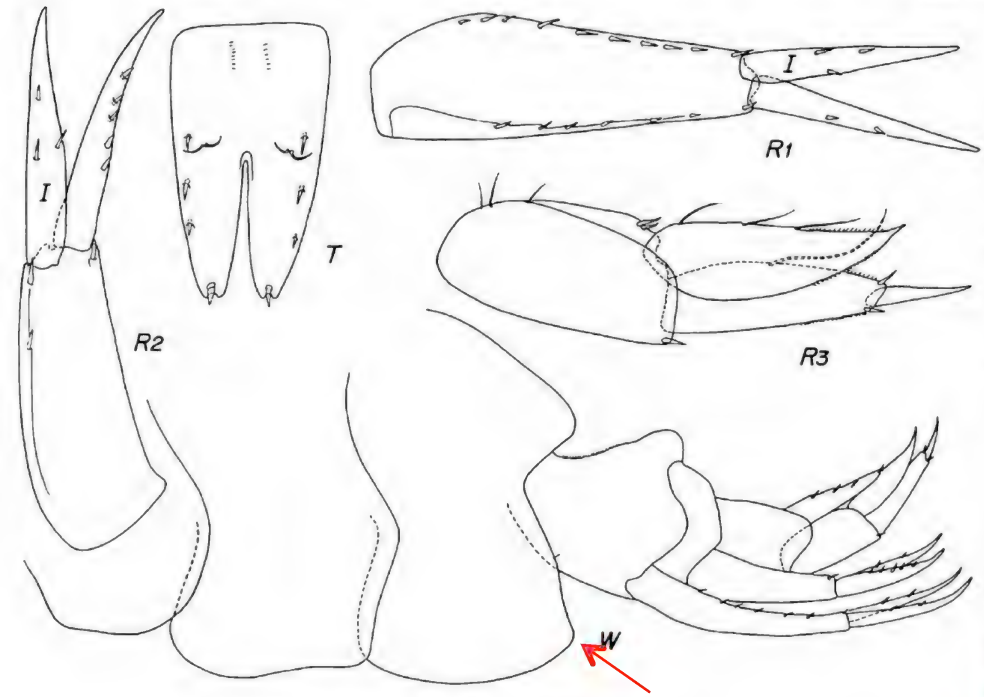
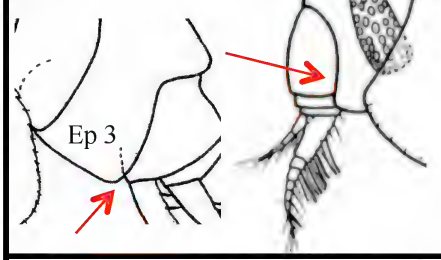
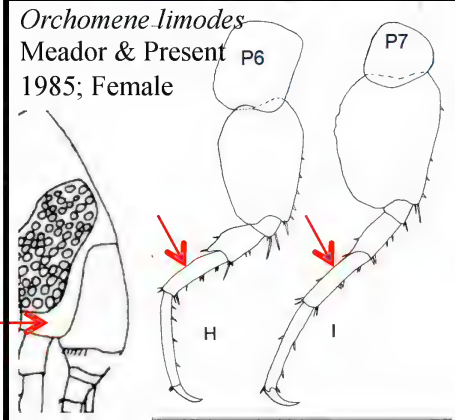


FIGURE 17.—*Orchomene abyssorum*, male "s" 6.41 mm.

Orchomene anaquels JL Barnard 1960; Female



Orchomene limodes Meador & Present 1985; Female



D.Pasko 6/2021

Abyssorchomene distinctus (Birstein and Vinogradov 1960) (from Barnard and Ingram, 1990); Male = "r"; female = unattributed and "o"

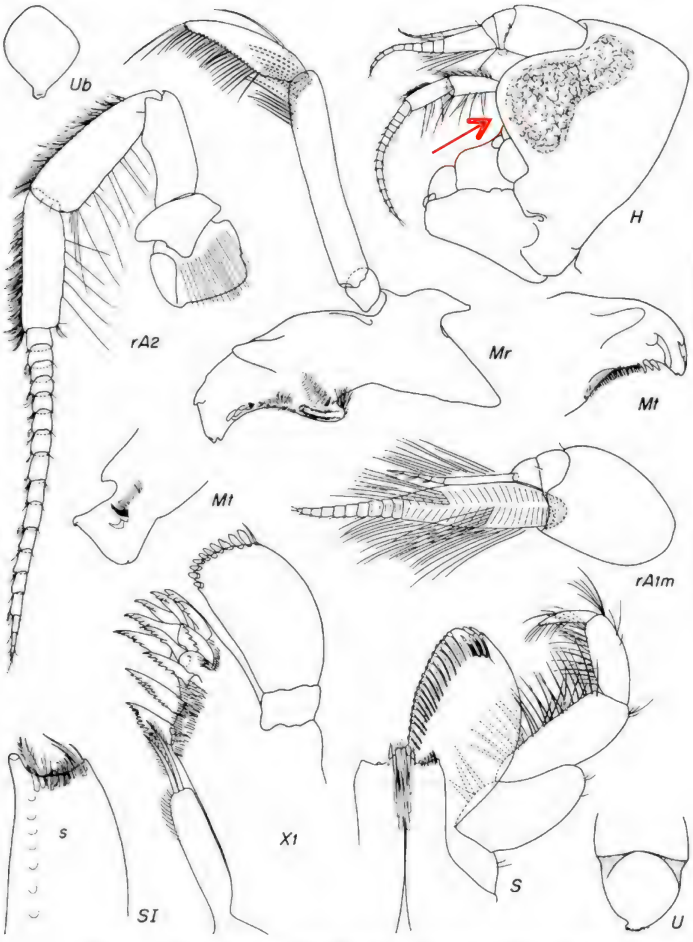


FIGURE 12.—*Orchomene distinctus*: unattributed figures = female "o" 13.92 mm; r = male "r" 12.32 mm.

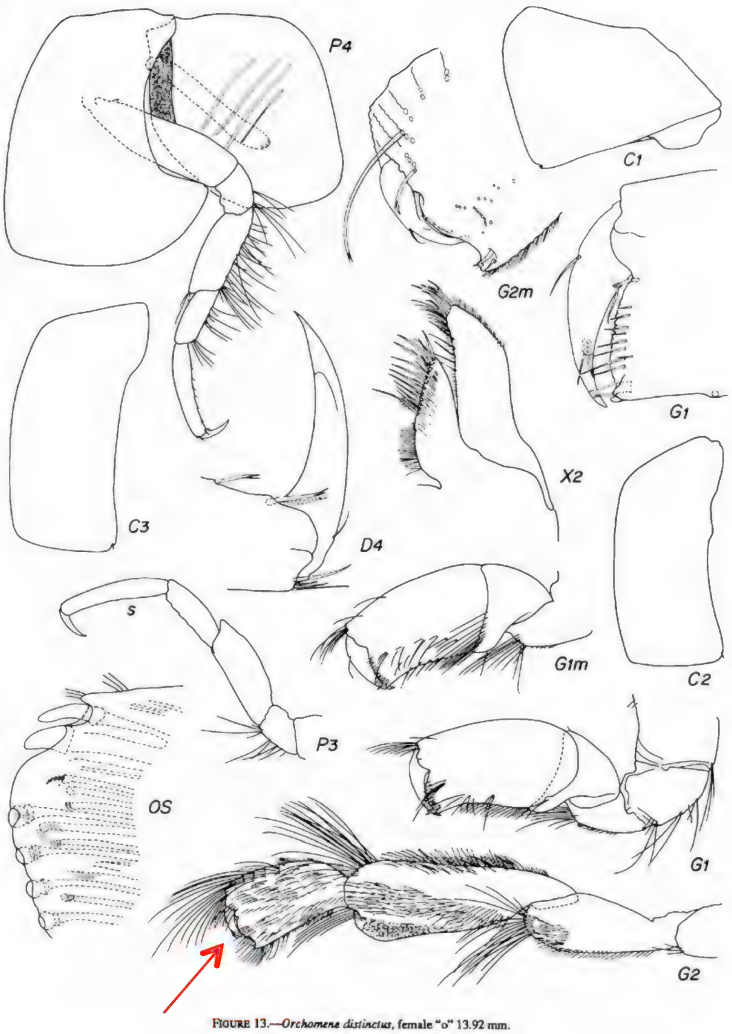


FIGURE 13.—*Orchomene distinctus*, female "o" 13.92 mm.

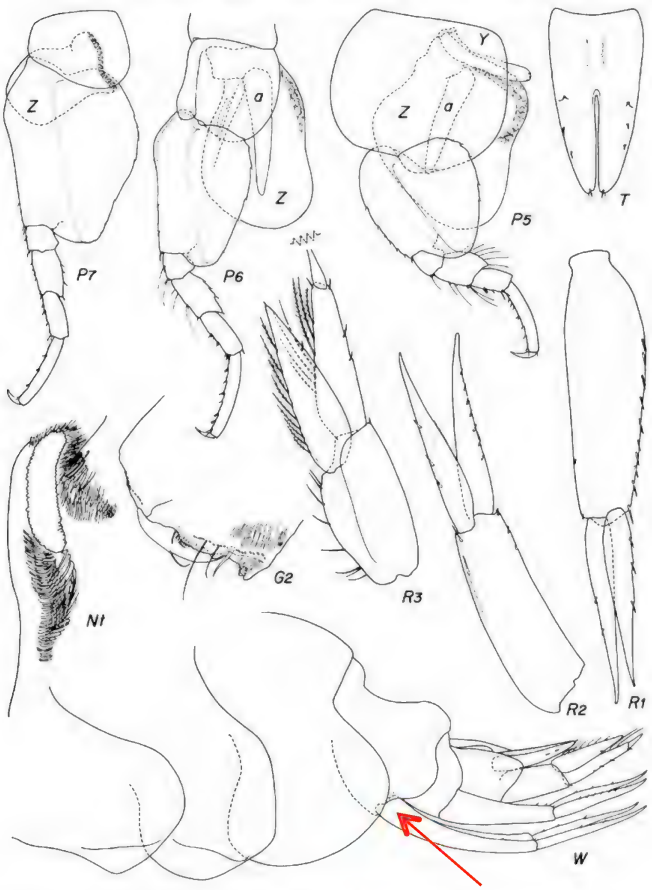
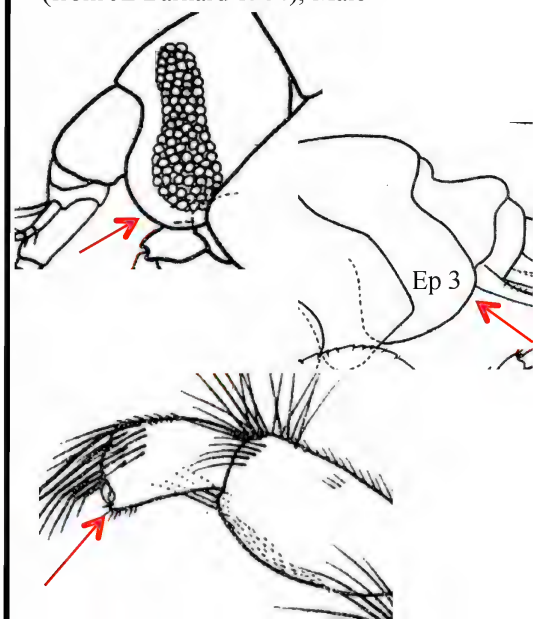


FIGURE 14.—*Orchomene distinctus*, female "o" 13.92 mm.

Orchomene obtusa (GO Sars 1891) (from JL Barnard 1964); Male



D.Pasko 6/2021

Abyssorchomene gerulicorbis (Shulenberger & JL Bardard 1976)

(from Shulenberger & JL Barnard 1976); Female

Orchomene anaquels JL Barnard 1960); Female

Orchomene limodes Meador & Present 1985; Female

D.Pasko 6/2021

Key to the southern California species of *Ericthonius* (Amphipoda: Ischyroceridae)

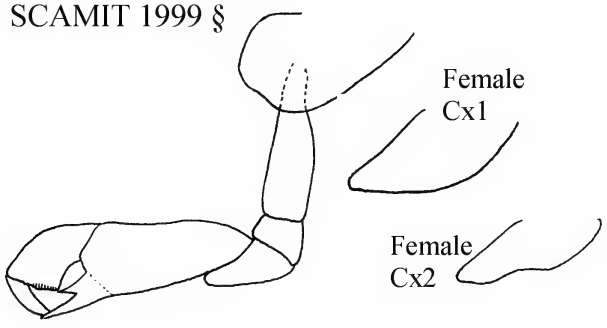
Dean Pasko 9 March 1999 (Revised 12June2021)

1 Eyes clear, unpigmented 2
– Eyes pigmented 3

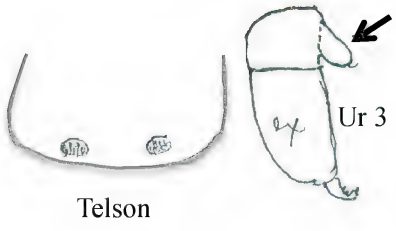
2 Uropod 3 with vestigial inner ramus; telson with short, small patches of recurved denticles positioned dorsally ..... *Ericthonius* sp A
– Uropod 3 uniramus; recurved denticles of telson along dorsolateral margin; coxa 1 produced, wider than deep (male and female); male coxa 2, ventral margin straight; female coxa 2 "stepped" (i.e., anteriorly produced and posteriorly excavate) ..... *Erichthonius* sp SD1

3 Eyes reddish; male gnathopod 2 with simple apical tooth on carpus; female coxa 5 with obtuse posterior lobe, posterior margin sloping; shallow to deep coastal waters ..... *Ericthonius rubricornis*
– Eyes dark (brown or black); male gnathopod 2 with bifid apical tooth on carpus; female coxa 5 with rounded posterior lobe, posterior margin not sloping backwards; shallow sublittoral to bays and harbors..... *Ericthonius brasiliensis*

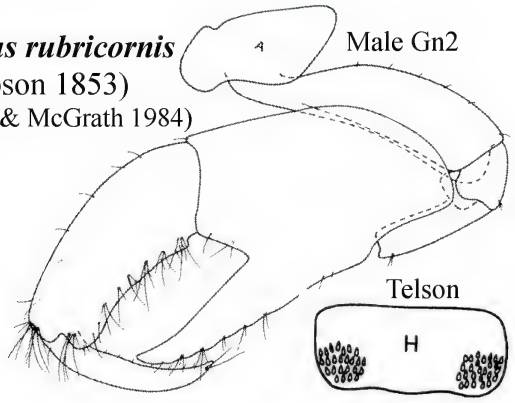
***Ericthonius* sp SD1**
SCAMIT 1999 §



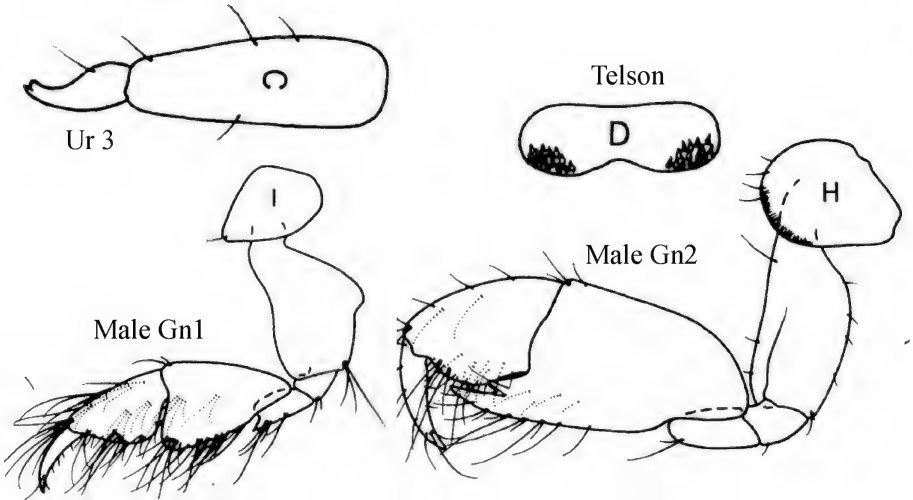
***Ericthonius* sp A** SCAMIT 2012 §



Ericthonius rubricornis
(Stimpson 1853)
(From Myers & McGrath 1984)



Ericthonius brasiliensis (Dana 1853)
(From Myers & McGrath 1984)



SCAMIT CODE Date examined: 16 February 1997

SYNONOMY:
? *Ericthonius brasiliensis* juvenile

LITERATURE:
Bousfield, E.L. 1973. Shallow water Gammaridean Amphipods of New England. Cornell University Press, Ithaca, New York; 312 pp.
Barnard, J.L. 1975. Phylum Arthropoda: Crustacea, Amphipoda: Gammaridea. Pp. 313 366. IN: R.I. Smith and J.T. Carlton (eds), Light's Manual: Intertidal Invertebrates of the Central California Coast. Third edition, University of California Press, Berkeley, California.

DIAGNOSTIC CHARACTERISTICS:
A small species, approximately 2-3 mm at maturity, with general characteristics very similar to *E. brasiliensis*. Eyes unpigmented
Male gnathopod 2 with double defining tooth; coxa much broader than deep, antero-ventral margin slightly concave, posterior margin oblique; article 2 (basis) elongate.
Male coxa 1 anteriorly produced, much broader that deep.
Male and female uropod 3 peduncle = urosomite 3.
Female coxa 1 anteriorly produced, obliquely rounded posteriorly.
Female coxa 2 anteriorly produced, ventrally stepped (or sinuous), with oblique posterior margin.
Uropod 3 broadened proximally, narrowed distally, approximately 2x width of distally bifid ramus.

RELATED SPECIES:
This species is very similar to *Ericthonius brasiliensis* in form of the gnathopods, mouth part morphology, shape of coxa 5, length of uropod 3 peduncle (= urosomite 3), uropod armature, etc. The species differs in its consistently small size at maturity (approximately one-half the size of *E. brasiliensis*), the distinctive shape of coxae 1 and 2, and the more elongate article 2 of gnathopod 2 (male).

OTHER COMMENTS:
It is possible that these specimens may have been mistaken for juvenile forms *of E. brasiliensis*. The consistently small size (2-3 mm) of ovigerous females and males with well developed penes, together with the few but consistent differences listed above lead me to believe that it represents a separate species.

DISTRIBUTION:
La Jolla, CA (CSDMWWD station 2137, 7-15-96, 157 ft) and San Diego/Imperial Beach, CA (CSDMWWD stations 2121, 7-9-96, 275 ft; I-34, 7-16-97, 63 ft).

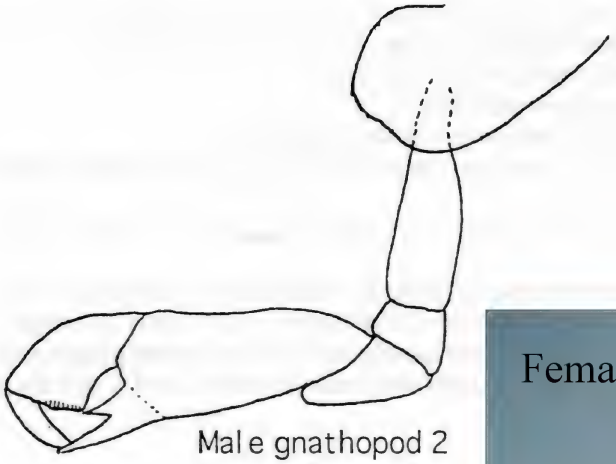
Female Gn1

Female Gn2

D.Pasko 6/2021

Male coxa 1

Female coxa 1



Male gnathopod 2

Female coxa 2

Ur 3

Relevant Isopod Resources & Keys

Brusca, RC, V Coelho and S. Taiti. 2007. Isopoda. In: The Light and Smith Manual: Intertidal Invertebrates from Central California to Oregon, 4th edition (Carlton JT, ed.). University of California Press, Berkeley, CA p. 503-542.

Brusca, RC, V Coelho and S. Taiti. 2001. A Guide to the Coastal Isopods of California. Internet address: http://tolweb.org/notes/?note_id=3004

Haney, LH. 2006. Camparison of Male and Female Gnathiids

Haney, LH and DB Cadien. 2006. Key to Male Gnathiid Isopods.

Haney, LH and DB Cadien. 2006. Key to Hypothesized female gnathiids

Kensley B and M Schotte. 1989. Marine Isopod Crustaceans of the Caribbean. Smithsonian Institution Press. Washington D.C. 308 pp.

Menzies RJ and D Frankenberg. 1966. Handbook on the common marine isopod Crustacea of Georgia. University of Georgia Press, Athens. 93 pp. Barnard, JL. 1962. Benthic marine Amphipoda of Southern California; 3. Families Amphilochidae, Leucothoidae, Stenothoidae, Argissidae, Hyalidae." Pacific Naturalist 3(3): 116-163.

Richardson, H. 1905. A monograph on the Isopods of North America. Government Printing Office, Washington D.C. 727 pp.

Schultz, G. 1969. How to know the Marine Isopod Crustaceans. Wm. C. Brown, Dubuque, Iowa, 359 pp.

Stebbins, TD. 2012. Coastal Marine Isopods of Southern California Bight. SCAMIT Presentation, 13-February-2012

Stebbins, TD. 1999. Key and Notes to the Marine Isopods (Crustacea: Isopoda) Known from Coastal Shelf Bottoms in the Southern California Bight. August, 1999.

Stebbins, TD. 2012. Key and Notes to California Valviferan Isopods (Crustacea: Isopoda: Valvifera). SCAMIT Presentation 13-February-2012

Stebbins, TD. 2012. California Epicaridean Isopods: Superfamily Bopyoidea and Cryptoniscoidea (Crustacea, Isopoda, Cymothoida).

Stebbins, TD. 2012. Bopyrid Isopods (A Table of Hosts and Characters of SCB Bopyrid Isopods).

Wall, A R, NL Bruce, R Wetzer 2015. Status of Exosphaeroma amplicauda (Stimpson, 1857), E. aphrodita (Boone, 1923) and description of three new species (Crustacea, Isopoda, Sphaeromatidae) from the north-eastern Pacific. ZooKeys 504: 11-58.

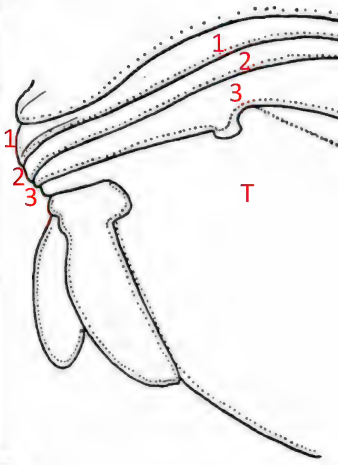
Wetzer, R and NL Bruce 2007. A new species of Paradella Harrison & Holdich, 1982 (Crustacea: Isopoda: Sphaeromatidae) from Baja California, Mexico, with a key to East Pacific species. Zootaxa 1512: 39-49.

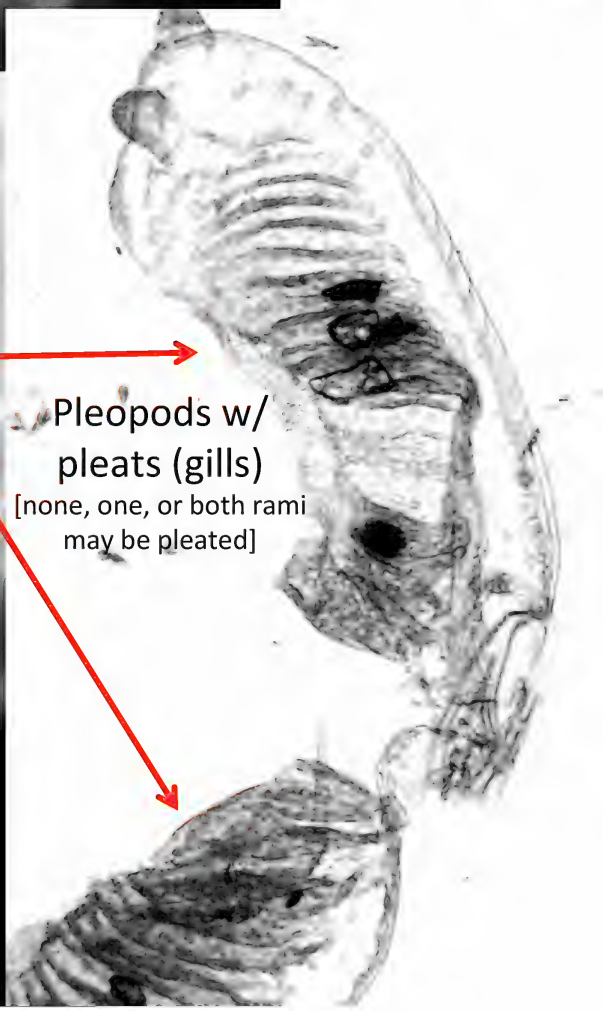
Wetzer, R and G Mowery 2017. Redescription of Dynoides elegans (Boone, 1923) (Crustacea, Isopoda, Sphaeromatidae) from the north-eastern Pacific. ZooKeys 646: 1-16.

Wetzer, R, A Wall, NL Bruce. 2021. Redescription of Gnorimosphaeroma oregonense (Dana, 1853) (Crustacea, Isopoda, Sphaeromatidae), designation of neotype, and 16S-rDNA molecular phylogeny of the north-eastern Pacific species. ZooKeys 1037:23-56 Wetzer, R., Brusca, R.C., and Wilson, G.D.F. 1997. Introduction to the marine Isopoda. Pp. 1-8 in: Blake, J.A. and P.H. Scott (eds.), Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel, Vol. 11: The Crustacea Part 2: The Isopoda, Cumacea and Tanaidacea. 278 pp.

Isopoda: Sphaeromatidae

2-3 free pleonites





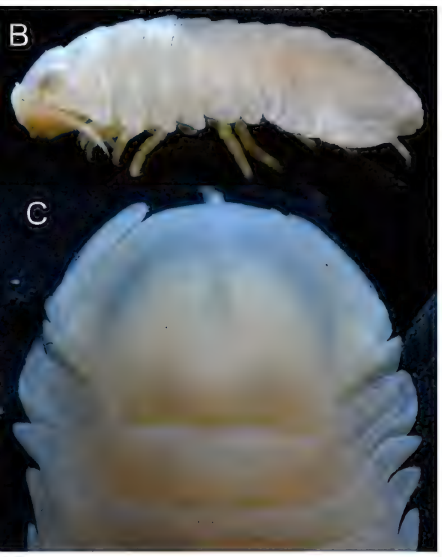
Pleopods w/ pleats (gills)
[none, one, or both rami may be pleated]

D.Pasko 6/2021

Key to NEP *Gnorimosphaeroma*

Wetzer et al 2021

(B & C) *G. insulare*



1 Body length 2 × width. Body widest at pereonite 7 and anterior portion of pleon (Fig. 14A). Known only from a freshwater pond on San Nicolas Island..... ***Gnorimosphaeroma insulare***

– Body more than 2 × width. Body widest at pereonite 6 or pereonites 2–7 similar in width **2**

2 In lateral view, pereonite coxal plates 2, 3, and 4 anterior margins raised, posterior margin not raised, giving coxae a somewhat "s-shaped" appearance (Fig. 15A, C). Species is fully marine ..... ***Gnorimosphaeroma oregonense***

– In lateral view, pereonite coxal plates 2, 3, and 4 anterior margins not raised. Species may occur in marine, brackish, or freshwater **3**

3 Pereonites 1–4 coxal plates margins with setose fringe (Fig. 15B). Posterior pleotelson margin with slight indentation (Fig. 12A). Species occurs in brackish or freshwater..... ***Gnorimosphaeroma noblei***

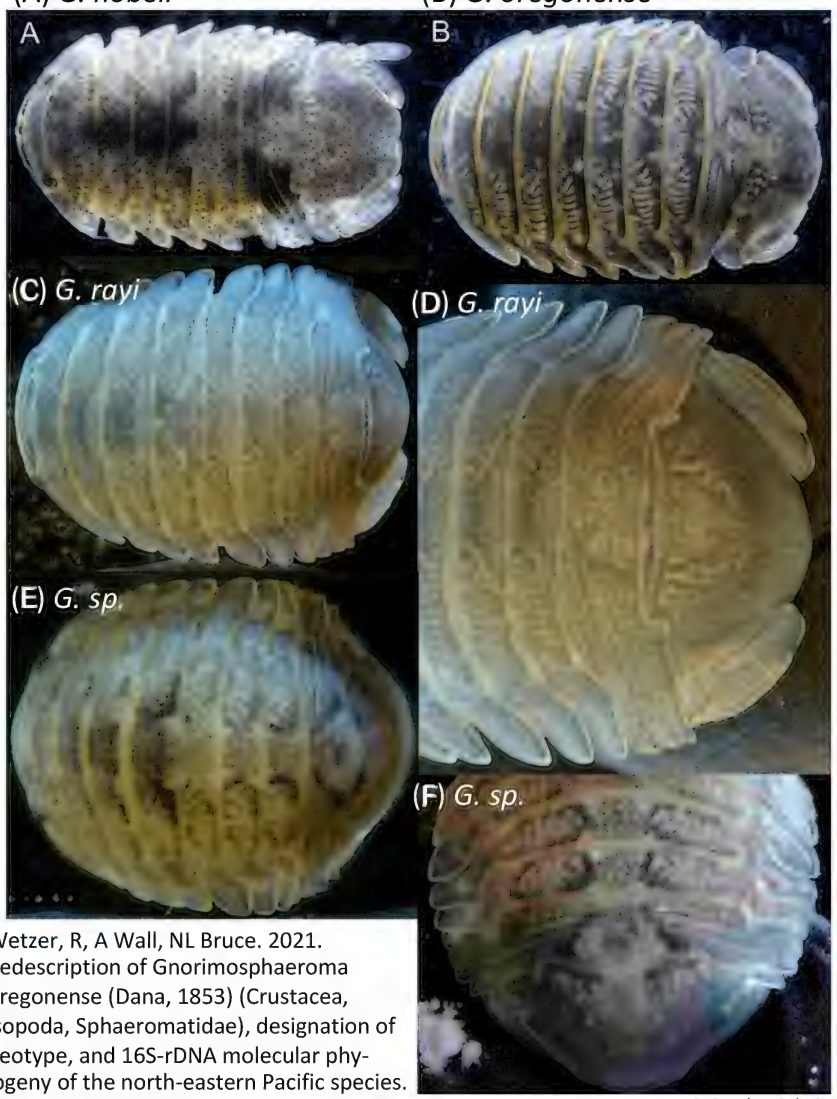
– Pereonites 1–4 without setose fringe on coxal plate margins. Posterior pleotelson margin without indentation (Fig. 12D, F). Species are fully marine..... **4**

4 Pleonites lateral margins acute. Pleon lateral anterior margin smooth, without ornamentation (Fig. 12D) ..... ***Gnorimosphaeroma rayi***

– Pleonites lateral margins rounded. Pleonal lateral anterior margin with short acute lobe (Fig. 12F)..... ***Gnorimosphaeroma* sp.**

(A) *G. nobeli*

(A) *G. nobeli* (B) *G. oregonense*



Wetzer, R, A Wall, NL Bruce. 2021. Redescription of Gnorimosphaeroma oregonense (Dana, 1853) (Crustacea, Isopoda, Sphaeromatidae), designation of neotype, and 16S-rDNA molecular phylogeny of the north-eastern Pacific species. ZooKeys 1037:23-56

D.Pasko 6/202

SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS

Sept–December 2021 SCAMIT Newsletter Vol. 40 No. 3&4

Various color phases of *Rossia pacifica*
OCSD trawls, station T19, 2 Sept 2021, 137m
Photo by K. Barwick

This Issue

13 SEPTEMBER 2021, MOLLUSKS, LEAD T. PHILLIPS, ZOOM 2
12 OCTOBER 2021, MISCELLANEOUS PHYLA, LEAD M. LILLY, ZOOM 3
12 DECEMBER 2021, ALL HANDS MEETING, ZOOM 5
REFERENCES 7
SCAMIT OFFICERS 8

The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes

Publication Date: March 2023

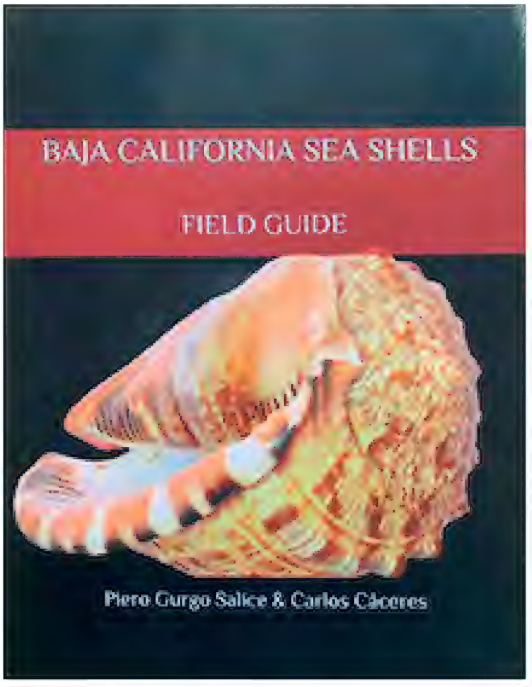
13 SEPTEMBER 2021, MOLLUSKS, LEAD T. PHILLIPS, ZOOM

Attendance: Tony Phillips, DCE; Susan Kidwell, Broc Kokesh, University of Chicago; Greg Lyon, CLAEMD; Kelvin Barwick, OCSD; Diane O'Donohue, Jessica Donald, Heather Petersen, Alison Fisher, SFPUC; Wendy Enright, Megan Lilly, CSD; JoJo Loan, Don Cadien, Brent Haggin, Terra Petry LACSD; Paul Valentich Scott, SBMNH; Angelica Zavala Lopez, MTS Carol Paquette, MBC; Austin Hendy, NHMLAC.

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the most current meetings announcements.

The day opened with Dr. Kidwell introducing her grad student, Broc Kokesh. Kelvin then had the floor and wanted to preview a new book he recently purchased, *Baja California Sea Shells Field Guid*e by Piero Gurgo Salice and Carlos Cáceres Martínez (2021). He learned of it at last June's annual meeting of the Western Society of Malacologists. It attempts to illustrate and name all shelled mollusks found along the shoreline of the entire Baja peninsula. It consists of good color photos of 1,097 species arranged by class and family into 109 plates. Each plate caption includes not only the binomials and authorities, but general locality information and the size, in millimeters, of the specimens pictured. Along with a name index there is a phylogenetic listing and a bibliography. Kelvin purchased it at Amazon.com for $50. Paul recommended it, noting that a guide to the gastropods hasn't really been updated since Keen in the 1970s.



Next, Kelvin shared some great field photos of *Rossia pacifica* going through various phases of camouflage.

Business closed and Tony began with his very thorough and informative presentation which covered the - Nuculidae, Solemyidae, Nucinellidae, Bathyspinulidae, Nuculanidae, Malletiidae, Neilonellidae, Yoldiidae, and Tindariidae. The names used follow Ed 13. This presentation will be an invaluable resource for local SCB bivalve taxonomists.

Below are comments that arose from various slides throughout the talk:

With regards to *Acila* – Paul discussed juveniles and how the cancellate sculpture is not yet developed which can cause them to be confused with juvenile Nuculanids. However, *Acila* will be more inflated at the umbos than juvenile Nuculanids.

Don stated that while *Acharax* is usually found in deeper, sulfide-rich waters, they have been sampled in shallower waters if the associated sediments are anoxic.

Huxleyia munita – it was noted that they have become less prevalent in samples over time. Paul mentioned that they are normally encountered at 200m or deeper, but CSD used to sample them with some regularity at 100m. There was some musing that perhaps warming ocean temperatures

are pushing them deeper in to waters that CSD doesn't sample for its regular monitoring program.

Tindariopsis grasslei - the range has been extended north to San Diego County in 1000m. It was collected by MBARI and identified by Paul.

Ledella fiascona – If it is found in Southern California it will be in deeper waters; 1000+ m range, according to Paul.

Some questions arose about separating *Nuculana* sp A from *Nuculana* sp OC1. It was noted that Kelvin should distribute pictures of his *Nuculana* sp OC1. Supposedly *Nuculana* sp OC1 is found a little deeper, 150+m and has a different tooth count. However, not everyone was convinced of its difference from *Nuculana* sp A. Paul commented that tooth counts are not a great tool as some amount of variability is normal; in order for tooth count to be a valid difference between species, you would need almost "twice as many" teeth from one species to the other. An additional concern is that hinge teeth are added with growth.

Yoldiella sp A should be removed in Ed 14. It was originally identified incorrectly and was later determined to be a *Yoldiella nana*. There is a valid *Yoldiella* sp A created by Paul, but it is not the same animal as what Tony recorded, and it is not from the SCB. Therefore, Tony's provisional shouldn't be included in the SCAMIT species list since technically it hasn't been identified from Southern California.

12 OCTOBER 2021, MISCELLANEOUS PHYLA, LEAD M. LILLY, ZOOM

Attendance: Brent Haggin, Chase McDonald, JoJo Loan, Terra Petry, Don Cadien, LACSD; Jennifer Smolenski, Cody Larsen, CLAEMD; Wendy Enright, Megan Lilly, Zoë Scott, Stephanie Smith, CSD; Ben Ferraro, Ernie Ruckman, Dany Tang, OCSD; Dean Pasko, Tony Phillips, DCE; Jessica Donald SFPUC; Angelica Zavala Lopez, MTS; Robin Gartman, retired.

The business portion of the meeting was brief, so we started off the day discussing juvenile ascidians, and when to back off to Stolidobranchiata vs Ascidacea. It was decided that a meeting on juvenile ascidians and ID protocols was probably needed. There was a word of caution regarding establishing set guidelines as this can oftentimes add more complexity than clarity. During Bight surveys the ID usually gets dropped back to the higher taxon level due to differences in taxonomic effort and protocols across the different laboratories/taxonomists.

Campanulariidae – Megan asked if there was any species, other than *Laomedea calceolifera* that should be considered as a solitary, infauna animal, thereby qualifying it for inclusion in the data. It is part of the age-old debate between those who are strict about recording infauna only vs those that want to include epifauna (barnacles), epibionts (many hydrozoa and barnacles), and parasites (shrimp parasites-Bopyridae). No satisfactory consensus was reached. It was suggested that Misc Phyla taxonomists will need to revisit this with regards to regional monitoring as we sample in different habitats. Jennifer Smolenski said she might try to create a presentation justifying more inclusivity. However, it was pointed out that especially for the Bight projects, we should be more conservative with our IDs since the Bight manual excludes fouling communities.

The question arose as to whether anyone other than DCE taxonomists use *Edwardsia* sp as an identification or is the more common practice to back off to Family Edwardsiidae? Many present said they use Edwardsiidae as the standard for backing off. We noted, however, if a physa is present taxonomists should be comfortable taking the specimen to genus.

Publication Date: March 2023

Pentactinia californica - CSD samples this species in shallow, coarse sediment stations in their South Bay monitoring. However, Jojo had recorded a specimen from deep water, which raised a few eyebrows. She distributed pictures and an ID sheet and the animal did appear to be *P. californica*. This suggests that this species may be more dependent on sediment-type than depth.

What to do with "Enopla", Hoplonemertea, Monostylifera sp, and Monostilifera, with regards to which is correct for backing off. The decision was that since Class Enopla (as well as Class Anopla) "went away" with Ed 13 (Strand et al 2018) it is no longer appropriate to use with the exception of historical provisional species names. Monostylifera sp and Monostilifera both come with complications as well so the consensus was to back off to Hoplonemertea.

This lead to a discussion of *Tetrastemma* sp, Tetrastemmidae, and Amphiporidae vs Hoplonemertea. The final decision was that if the taxonomist has "no idea", the proper level to back off the identification to is Hoplonemertea. One exception would be if someone is working in a station with high abundances of known Amphiporid species, there is the potential to apply Amphiporidae to damaged or smaller specimens, assuming that the general morphology is well matched.

Phoronida vs Phoronidae – We decided that backing off to Phoronidae was most appropriate. A discussion around counting protocols (i.e., how to distinguish regenerating heads from those that have been lopped off) will need a future meeting.

Similar questions arose around Sipuncula and Sipunculidea. Changes will be coming in Ed 14 so at the time of this meeting it was decided to do nothing as the SLRC will be tackling this issue.

Dean asked if agencies routinely record nematodes? There was a resounding response of "no", other than CSD who counts and records nematodes for historical data consistency. We noted though that nematodes are excluded from Bight data analyses.

Cerianthidae vs Ceriantharia was discussed and the consensus was for Ceriantharia.

A moment was taken to discuss that the ID of Lineidae, which is used for those animals with cephalic slits, vs Heteronemertea for those animals without cephalic slits but with Heteronemertean musculature and LNC placement. Some of the animals identified as Heteronemertea have cephalic "lines" that almost appear as shallow cephalic slits or that have very short, very shallow cephalic slits.

Tubulanidae vs *Tubulanus* sp vs Palaeonemertea – all these identifications are valid and acceptable. Anything with a white preservation ring is Tubulaniformes.

Turning to flatworms: Leptoplanidae vs Leptoplanoidea – consensus was for the use of Leptoplanoidea.

With that it was time to review voucher sheets. Lineidae sp DC1 Pasko 2019 - this specimen became incorporated into Cody's Lineidae sp Hyp3 Larsen & Pasko 2019. The final sheet was published in Vol 39 no 4 under the new SCAMITized name, Lineidae sp B.

Dean shared his identification sheets for *Phoronis* sp DC 1, Actiniaria sp DC2, Hoplonemertea sp DC1 and Hoplonemertea sp DC2. All were reviewed and approved. They have since been published. See Volume 39 no 4.

9 NOVEMBER 2021, POLYCHAETE KEY REVIEW, LEAD B. HAGGIN, ZOOM

There are currently no minutes available for this meeting. However, if produced, they will be published in a future newsletter.

12 DECEMBER 2021, ALL HANDS MEETING, ZOOM

Attendance: Heather Peterson, CCSF; Don Cadien, Brent Haggin, Christine Boren, Terra Petry, JoJo Loan, LACSD; Erin Oderlin, Craig Campbell, Greg Lyon, JoAnne Linnenbrink, CLAEMD; Wendy Enright, Megan Lilly, Maiko Kasuya, Andrew Davenport, CSD; Tony Phillips, Dean Pasko, DCE; Leslie Harris, NHMLAC; Kelvin Barwick, OCSD. [There were more people present, but the final attendance sheet has not been located]

All meetings last year were virtual and it has been a convenient option for attendees from outside of southern California. As of now the meetings for 2022 are also scheduled to be virtual, with the hope of having an in-person meeting in June for the long-postponed DISCO workshop.

Don asked if the NHMLAC is open yet? Brent replied that the Museum is open to the public with proof of vax or negative test, and masks are required. Brent is hoping for hybrid meetings in the future so that those further away can continue to attend; he is envisioning a possible virtual presentation for the first half of meeting and specimen examination in the afternoon.

Officer Reports:

President - Brent Haggin: First up was the voucher sheet database project. Work is progressing and currently 34 sheets have been uploaded. It has been designed so that provisional species sheets can go through the verification process and be SCAMITized more seamlessly. Lineidae B has gone through the process and been published in Vol 39 no 4.

Treasurer - Erin Oderlin:

- 150 members worldwide
- over $7500 available for publication grants; the last grant was awarded to Larry Lovell in 2020 for his *Levinsinia* paper
- she is keeping money in the PayPal account because it pays for the Zoom account but it is making payment tricky, so she would rather set up an ACH with Zoom. However, Zoom has been difficult to contact
- SCAMIT made more money this year due to meetings be virtual so there were no refreshment expenses
- The PO Box renewal is in May which is SCAMIT's fiscal year so sometimes members will see two payments in one year on our PO Box
- closed the CD because wasn't making much and the monies, approx. $10k, were transferred into our checking account
- total cash is almost $30k
- Erin is open to members' ideas for expenses
- the PayPal fee will be increasing, because PayPal is increasing fees on nonprofits

Publication Date: March 2023

Secretary - Megan Lilly: She is still behind in newsletter production by about a year. She is hoping to start catching up next year and might do double issues to facilitate her efforts. Erin noted that an Institutional membership includes a hard copy but if you don't want a hard copy, just email Erin and let her know.

Vice President - Leslie Harris: SCAMIT had only 1 guest speaker this year, Sean Weidrick in January, but otherwise all meetings were virtual and there were no workshops. She made a point that the same people are doing meetings over and over and we need new members to step up. For SCAMIT to continue we need to have new people leading meetings, giving presentations and creating content.
Tony noted he has his bivalve presentations ready to go and can always fill in if a month is lacking a topic.
Leslie offered to reach out to Marie Nydam (Soka University), to lead an ascidian meeting. She will also reach out to Tom Lee Turner (UCSD), about leading a meeting on sponges. Megan will reach out to Rich Mooi about maybe leading another meeting on echinoderms.
With that Leslie went around the room and succeeded in filling the meeting calendar for next year (2022).

Kelvin Barwick was next to have the floor as Chair of the SLRC. Ed 13 of the SCAMIT Species List was published on 1 July 2021 and was no small feat.

- The process took 18 taxonomists and 4 editors
- There were 897 lines of emendation
- The number of taxa increased by 50 with a total of 3300 species level taxa

He thanked everyone for their assistance and wants to re-establish roles and responsibilities. Luckily Kelvin did offer to continue as chairman. He already was noting some priorities for Ed 14 and is hoping we can get it out in time for Bight'23. Tony stated that we really need to try since many of the B'18 species didn't make it in to Ed 13. He would like to see those species available for B'23. Another priority would be continuing to improve the process of incorporating provisional species. Tony noted some errors we missed in Ed 13, but that happens every time and is almost inevitable. Kelvin asked that we keep a list of errors as we note them.
Leslie was pleased to hear that dealing with provisionals is going to be a priority and would appreciate having provisional species documentation organized and available. Don reminded everyone that evidence needs to be marshalled for the provisional taxa, and that perhaps for Ed 14, we need to start applying rigid requirements. Accordingly, those taxa that are on the list and don't meet the established criteria for completeness, need to be dropped back to the Hold list. Don shared his process - as he finds a species that needs to be changed on the list, he prepares a discussion document and circulates it, for comment, to members of the review committee. This gives people a chance to review ahead of time and he felt that overall the model/system worked. Brent reiterated that if anyone is not yet on the SLRC and is interested in joining, to email Kelvin and let him know what phyla you would like to work on.

A Round Table discussion was next on the agenda:

We discussed the logistics of hybrid meetings and Brent offered to create an agency spreadsheet of who has what type of technology available.

- Brent – SCAMIT has its own gmail account now and consequently its own google drive for sharing options.
- Dean (Pasko) – we should research options for intermediate locations; Cabrillo Aquarium? MBC? SCCWRP? SCCWRP seems like the best option. Dean suggested Brent reached out to Christina about scheduling.
- Kelvin – brought up the idea of SCAMIT hosting a symposium at the upcoming WSM in June.
- Megan – noted that non "experts" can lead meetings and that often the best way to learn is to teach. She'd be happy to assist anyone who wants to host a meeting on one of the phyla in which she works.
- JoJo – asked if people are willing to share updated and new training materials as they are created? Megan responded that she is willing, but she needs reminders. Megan asked if the Toolbox is the best place for uploading materials and has some worries, as did other attendees, with it being public access and some materials not being in "final form" and ready for world domination. The feeling around the room was split with some feeling the Toolbox is the best option and others not feeling as comfortable with that choice.
- Leslie – told the room that she would like to hear comments and concerns from "new" people. A few people responded that they'd be willing to host a meeting but at the moment didn't have any questions to address. Leslie suggested the development of a digital suggestion box for meeting topics.
- Andy mentioned that occasionally he has questions or ideas but doesn't want to send them out to the entire SCAMIT listserver. What he would like to see is a member only forum on the website where people can post questions/notes.
- Kelvin made a motion, seconded by Megan, that SCAMIT form an Ad Hoc committee to investigate setting up a major phyla discussion forum on the website. Erin Oderlin volunteered to be Chair, with Andy, JoJo, and Cody, as committee members.
- JoAnne Linnenbrink requested an in-person meeting to review arthropod vouchers.

With that the Annual All Hands meeting was adjourned. The Executive Committee stayed online to discuss the SCAMIT webmaster role. It was moved, seconded, and approved, that Cody Larsen be brought on board as the new webmaster.

REFERENCES

Salice, P. G., and C. Martínez. 2021. Baja California Sea Shell Field Guide, Las Vegas, Nevada. pp 233.

Strand M, Norenburg J, Alfaya JE, Ángel Fernández-Álvarez F, Andersson HS, Andrade SCS, Bartolomaeus T, Beckers P, Bigatti G, Cherneva I, Chernyshev A, Chung BM, Von Döhren J, Giribet G, Gonzalez-Cueto J, Herrera-Bachiller A, Hiebert T, Hookabe N, Junoy J, Kajihara H, Krämer D, Kvist S, Magarlamov TY, Maslakova S; Mendes C B, Okazaki R, Sagorny C, Schwartz M, Sun SC, Sundberg P, Turbeville JM, Xu, CM. 2018. Nemertean taxonomy Implementing changes in the higher ranks, dismissing Anopla and Enopla. Zoologica Scripta. 48:118-119.

Please visit the SCAMIT Website at: www.scamit.org

SCAMIT OFFICERS

If you need any other information concerning SCAMIT please feel free to contact any of the officers at their e-mail addresses:

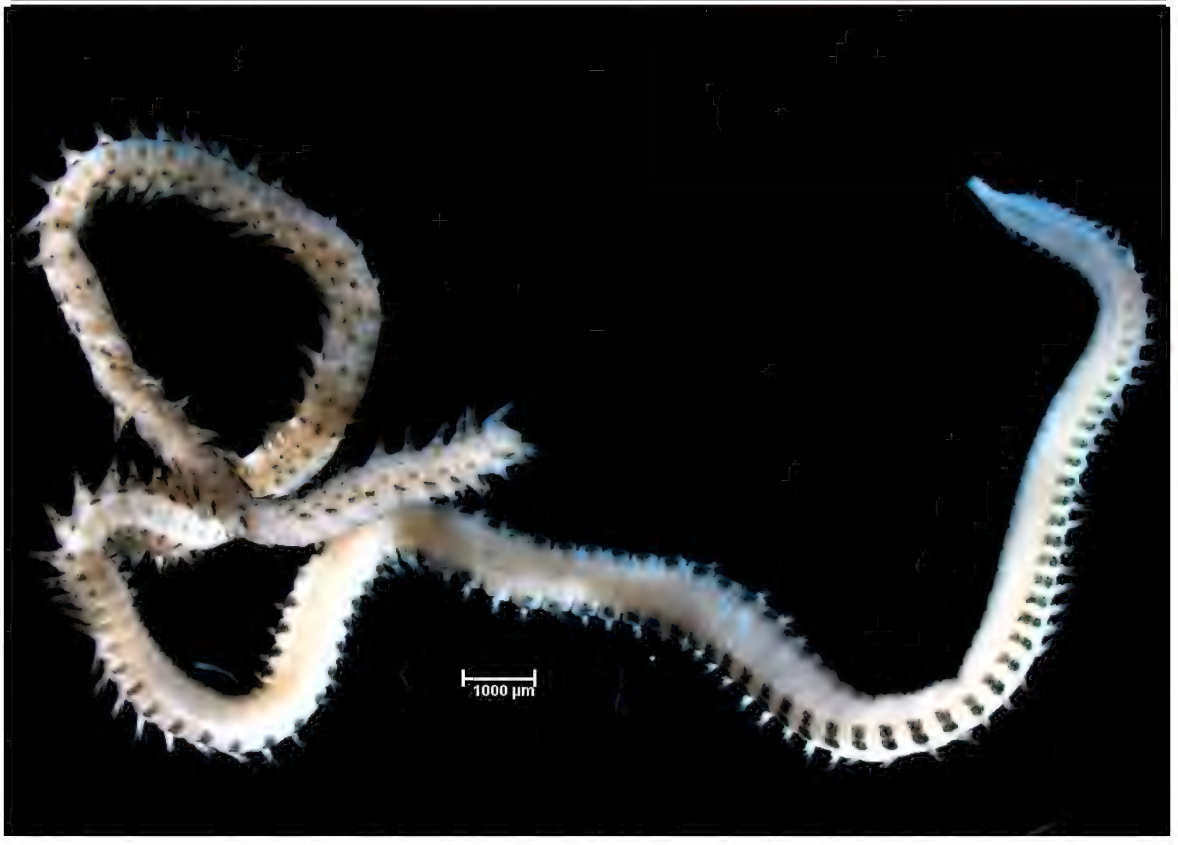
President	Brent Haggin	(562)908-4288 x 5672	bhaggin@lacsd.org
Vice-President	Leslie Harris	(213)763-3234	lharris@nhm.org
Secretary	Megan Lilly	(619)758-2336	mlilly@sandiego.gov
Treasurer	Erin Oderlin	(310)648-5477	erin.oderlin@lacity.org

SCAMIT is a 501(c)(3) charity. The newsletter is published every two months and is distributed freely to members in good standing. Membership is $20 for an electronic copy of the newsletter, available via the web site at www.scamit.org, and $35 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $65. All correspondences can be sent to the Secretary at the email address above or to:

SCAMIT
PO Box 50162
Long Beach, CA 90815

SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS

January–February 2022 SCAMIT Newsletter Vol. 40 No. 5



Goniada sp A SCAMIT 2023 §, LACSD station 2D, 15 July 2020, 31m, off Pt. Vicente, Palos Verdes. Photo by B. Haggin

This Issue

8 NOVEMBER 2021, ONUPHIDAE, *APHRODITA*, AND UPDATED POLYCHAETE KEYS, B. HAGGIN, ZOOM 2
10 JANUARY 2022, SCAMIT PROVISIONAL SPECIES TRIAGE, K. BARWICK, ZOOM 13
14 FEBRUARY 2022, ADVENTURES IN POLYCHAETING, ZOOM 14
PROVISIONAL SPECIES VOUCHER SHEETS 16
LITERATURE CITED 16
SCAMIT OFFICERS 20

The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes

Publication Date: June 2023

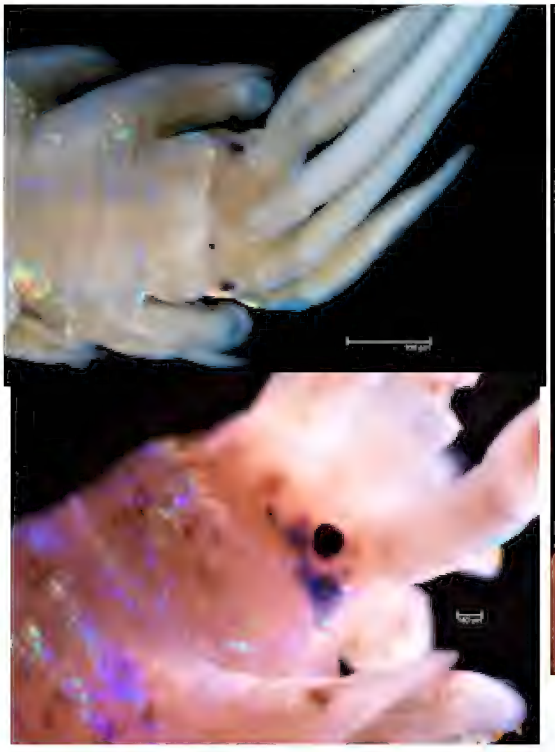
8 NOVEMBER 2021, ONUPHIDAE, *APHRODITA*, AND UPDATED POLYCHAETE KEYS, B. HAGGIN, ZOOM

Attendance – not taken, those attendees listed were gleaned from the meeting recording. Brent Haggin, Bill Furlong (LACSD); Ricardo Lara (CSD); Erin Oderlin (CLAEMD); Kelvin Barwick (OCSD).

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the most current meetings announcements.

Brent started the meeting by providing images (below) of *Hyalinoecia juvenalis* Moore, 1911, (Onuphidae) including the prostomium and tube characteristics. All images of *Hyalinoecia juvenalis* are from LACSD Station 0720-1D (31m) by B. Haggin.



Brent contiued with the Family Onuphidae with a presentation covering species from southern California. The review of the family included most of the species included in Ed. 13 of the SCAMIT Species List and local in-house provisional species not currently listed in Ed. 13. The morphology of the family was reviewed, characteristics of each species were detailed, and some new images were presented. Below are some of the species covered. Throughout the following polychaete minutes the acronyms are as follows:

- OLA – Outer Lateral Antennae
- ILA – Inner Lateral Antennae
- MA – Median Antennae
- The chaetiger #'s are how far the antennae stretch

Nothria sp DC1 Harris, 2014 § - collected by CLAEMD from Station 5B in 76m on July 24, 1976. Its characteristics are as follows:

- OLA extends to chaetiger 1
- ILA extends to chaetiger 4
- MA extends to chaetiger 5
- Branchiae from chaetiger 8-9, simple
- Ventral cirri cirriform on chaetigers 1-2, transitional on chaetiger 3, pads from chaetiger 4
- Postchaetal lobes digitate thru chaetiger 13
- Hooks falcate chaetigers 1-2; Pseudocompound on chaetiger 3, unidentate & bidentate in chaetigers 1-3
- Infra-acicular hooks from chaetiger 13
- Pectinate chaetae with many teeth
- Maxillary formula: MI-1+1; MII-6+10; MIII-7+0; MIV-6+8; MV-1+1
- Differs from *Nothria occidentalis* Fauchald 1968 in the following ways:
  - *N. occidentalis* MA extends to chaetiger 9
  - Ventral cirri pads from chaetiger 3
  - *N. occidentalis* chaete are falcate & unidentate in chaetigers 1-2 pseudocompound & bidentate in chaetiger 3
  - Infra-acicular hooks from chaetiger 9
  - Pectinate chaetae with ~10 teeth

Onuphis sp HYP1 - collected by CLAEMD from Station B1, 44m, July, 2011. Its characteristics are as follows:

Onuphis sp HYP1 Photo by T. Phillips
tic marks = 1mm (2012)

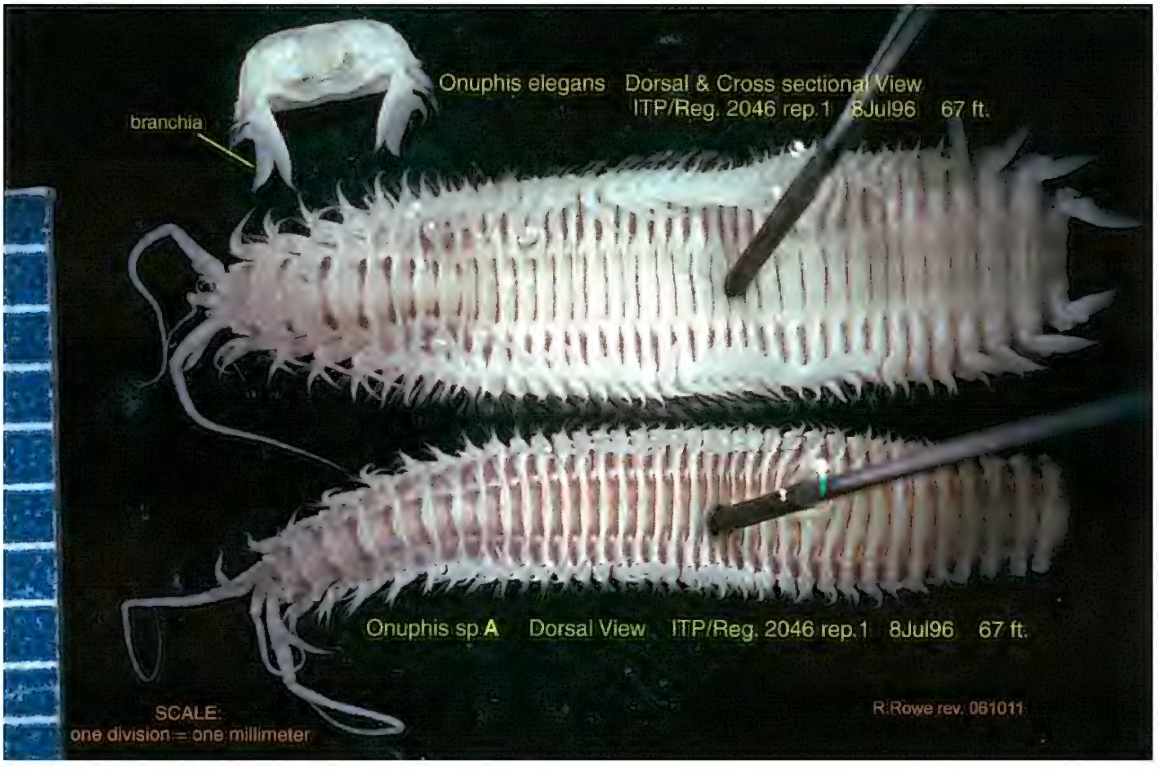
Onuphis sp HYP1 Photo by E. Oderlin (2020)

- OLA with 15 annulations
- ILA with 18-19 annulations

Publication Date: June 2023

- Branchiae from chaetiger 1, single filament to end of fragment (52 chaetigers)
- Ventral cirri cirriform in chaetigers 1-6, transitional chaetiger 7, pads from chaetiger 8
- Postchaetal lobe cirriform thru chaetiger 10, reduced in chaetiger 11 and absent after
- Pseudocompound hooded hooks in chaetigers 1-4, tridentate
- Subacicular hooks begin in chaetiger 11
- Pigmentation is similar to *Onuphis iridescens* (Johnson 1901)

Onuphis sp A - collected by multiple agencies. It is a shallow water species and its characteristics are as follows:


Onuphis elegans Dorsal & Cross sectional View
ITP/Reg. 2046 rep.1 8Jul96 67 ft.
branchia
Onuphis sp A Dorsal View ITP/Reg. 2046 rep.1 8Jul96 67 ft.
SCALE:
one division = one millimeter
R.Rowe rev. 061011

- Branchiae from chaetiger 1, single & thin throughout
- Ventral cirri pads from chaetiger 6 or 7
- Subacicular hooks begin in chaetiger 8-9
- Maxillary formula: MI-1+1; MII-7+7; MIII-8+0; MIV-6+8; MV-without teeth
- Pigmentation – wide brown bands form mid-dorsal squares in first few segments then complete bands
- Similar to *Onuphis iridescens* but subacicular hooks begin in chaetiger 12-13 and is deeper water
- Similar to *Onuphis elegans* (Johnson 1901) but the branchiae of *O. elegans* becomes very wide in median chaetigers and the maxillary formula of *O. elegans* is MI-1+1; MII-6/7+5/7; MIII-7/10+0; MIV-6/7+5/8; MV-1+1

Onuphis sp HYP2 - collected by CLAEMD from Bight '18 Stations: 10286 (175m), 10309 (166m), 10308 (173m), and 11000 (380m).

(All photos of *Onuphis* sp HYP2 are by E. Oderlin (2020). Left - Station B18-11000; Right - Station B18-10308.)

Its characteristics are as follows:

- Branchiae from chaetiger 1, single, changes from skinny to wide, but not winged
- Ventral cirri cirriform in chaetigers 1-5, transitional chaetiger 6, pads from chaetiger 7
- Postchaetal lobe present thru chaetiger 17, absent after
- Pseudocompound hooded hooks in chaetigers 1-4 (1-3 in small specimens), tridentate
- Subacicular hooks begin in chaetiger 12
- Pectinate chaetae flat, oblique, about 16 teeth
- Maxillary formula: MI-1+1; MII-9+9; MIII-8+0; MIV-7+8; MV-1+1
- Pigmentation – wide brown bands form mid-dorsal squares in first few segments then complete bands

Onuphis sp LA1 Haggin, 2019 § - this species has since been given a SCAMIT designation, *Onuphis* sp B SCAMIT, 2023 §, and its voucher sheet is provided with this newsletter.

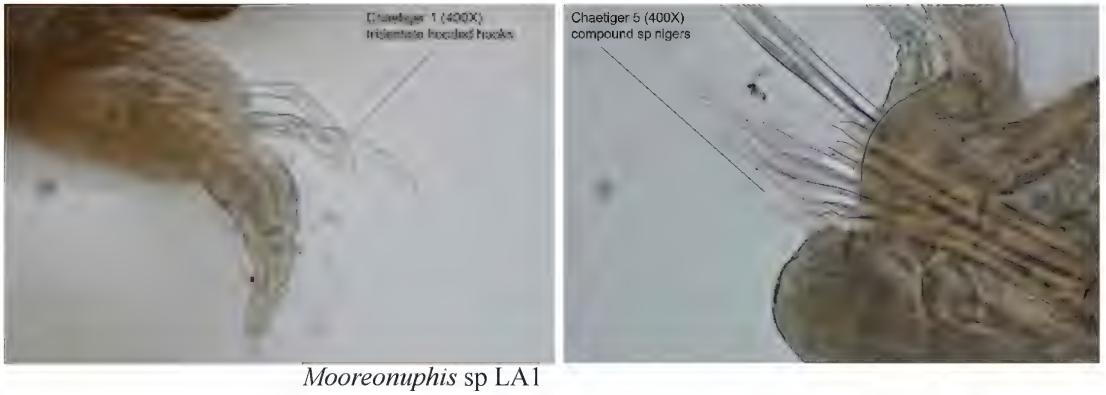
Brent then went on to give details on three additional provisional *Onuphis* species, *Onuphis* sp HYP1 Phillips, 2012 §, *Onuphis* sp HYP2 CLAEMD, 2020 §, and *Onuphis* sp A SCAMIT, 1992 §.

The next group discussed was the *Mooreonuphis* provisional species. Brent began with *Mooreonuphis* sp LA1 Brantley, 1999 §, originally collected off Santa Cruz Island during Bight '98. Subsequently, most of the records from LACSD have come from Station 2D (31m), which

Publication Date: June 2023

is characterized by gravel and coarse sand. When present, *Mooreonuphis* sp LA1 is typically collected in large quantities (10-50 individuals/sample). Images below are by B. Haggin.

The characteristics of *Mooreonuphis* sp LA1 are as follows:



Mooreonuphis sp LA1

- OLA to chaetiger 2
- ILA to chaetiger 7
- MA to chaetiger 2
- Branchiae absent
- Ventral cirri pads from chaetigers 4-6
- Postchaetal lobes digitate through chaetigers 16-18
- Pseudocompound hooded hooks in chaetigers 1-4, bidentate & tridentate
- Subacicular hooks begin in chaetiger 11-13
- Composite spinigers in chaetigers 4-12(13)
- Pigmentation – dark brown band across peristomium; thin band across the center of each segment which branch into a sideways triangle shape near each parapodia; thin bands across intersegmental groove; fading by chaetiger 40

Mooreonuphis sp SD1 Rowe, 1996 § was discussed next. It was originally collected off San Diego and LACSD has 1 record from Station 2D (31m). The characteristics of *Mooreonuphis* sp SD1 are as follows:

- ILA to chaetiger 8 (7-12)
- Branchiae simple from chaetigers 23-40 (high variability but always after chaetiger 22)
- Ventral cirri cirriform chaetigers 1-3, digitate on chaetiger 4, pads from chaetiger 5
- Pseudocompound hooded hooks in chaetigers 1-3, tridentate (occasionally with 1 or 2 bidentate)
- Subacicular hooks begin in chaetiger 11-14
- Simple hooks on chaetigers 4-5
- Composite spinigers in chaetigers 4-11
- Pigmentation – Peristomium brown, light transverse banding on chaetiger 1, darkening on 2 & 3, darkest from 4-25 then fading

The final Onuphid discussed was *Mooreonuphis* sp SD2 Rowe, 1996 §, originally collected off San Diego and has the following characters:

- OLA to chaetiger 2
- ILA to chaetiger 5-7
- MA to chaetiger 2
- Branchiae from chaetigers 5-8 (only present through ~1/2 of body), simple
- Ventral cirri cirriform chaetigers 1-3, digitate on chaetiger 4, pads from chaetiger 5
- Postchaetal lobes digitate through chaetigers 16-18
- Pseudocompound hooded hooks in chaetigers 1-3/4, tridentate (occasionally bidentate)
- Subacicular hooks begin in chaetiger 9-10
- Simple hooks on chaetigers 4-6
- Composite spinigers in chaetigers 5-9/11
- Pigmentation – broken band across chaetigers 1 & 2, continuous across next ~20 chaetigers, band getting thinner posteriorly

An updated key to the Family Onuphidae was also presented. The *Key to the Family Onuphidae of SCAMIT (Ed. 13) and Local Provisional Species* (Haggin, 2023), a character table in excel format, and a pdf of the Onuphid presentation, have all been uploaded to the SCAMIT toolbox.

The next presentation was - "*Aphrodita* of SCAMIT (Ed. 13), Local Provisional Species and Questionable Synonymies", also presented by Brent Haggin. He began the presentation with a review of *Aphrodita* morphology and definition of character states. The presentation moved on to species descriptions. The presentation can be found in the SCAMIT Toolbox:

The first species discussed was *Aphrodita brevitentaculata* Essenberg, 1917. This species was described from kelp holdfasts off San Diego and has the following characters:

- 2 pairs of large eyes, slightly fused
- Median antennae short, bends upwards with a bulbous tip
- Dorsal notochaetae without asperities & hooked tip
- Neurochaetae with smooth tips, nearly straight
- Felt colorless

The next species was *Aphrodita longipalpa* Essenberg, 1917. This species was described from off La Jolla, CA in 292m and has been collected by LACSD in "A" Station benthic grabs (305m) and in trawls between 200-305m. It has the following characters:

- Eyes not visible or absent
- Median antennae short, inserted far anterior on prostomium
- Palps very long (~11.5X length of prostomium)

- Dorsal notochaetae slightly hooked, covered in asperities
- Neurochaetae distally tapered, slightly curved & pilose

Unlike the first two species above which lack synonyms, the following species and their junior synonyms may prove to be problematic. The following species of *Aphrodita* have been, in Brent's opinion, inappropriately synonymized in the past. The first synonymy in question is that of *Aphrodita armifera* Moore, 1910 and *Aphrodita raripillata* Essenberg, 1917. *A. raripillata* was placed into synonymy with *A. armifera* by Hartman (1939) with the following two statements: 1) "*A. raripillata* Essenberg (1917, p. 413) agrees well with *A. armifera* Moore (1910, p. 371). Both types originated in southern California." 2) "*A. raripillata* Essenberg (1917, p. 413) from southern California may be referable to *A. armifera* Moore, although it is not certain that the inferior neuropodial setae have the paired spurs characteristic of the latter. In other respects the descriptions are similar." A comparison of some key characters shown below (from the original descriptions) illustrate the differences.

Species	***Aphrodita armifera***	***Aphrodita raripillata***
Type Locality	Monterey Bay, CA	San Diego, CA
Type Depth	56-80 m	27-55 m
Dorsal Notochaetae	With Asperites	With Asperites
Inferior Neurochaetae	Spurs & Asperites Present	Spurs & Asperites Absent
Ocular Prominence	Slightly Raised w/ Small Eyes	Prominent w/ Large Eyes

In Essenberg's (1917) description of *Aphrodita raripillata*, she acknowledges the similarities with *A. armifera*. "*Aphrodita raripillata* has a great resemblance to *Aphrodita armifera* (Moore, 1910), and is undoubtedly closely related to it. The chief difference is in the structure of the neurosetae. In *Aphrodita armifera* the neurosetae of the ventral series are covered with asperities and have a subterminal spur, while in *A. raripillata* no spur or asperities are seen even under the highest magnification." Hartman (1939) also confused a character in her redescription of *A. armifera* in stating "*Aphrodita armifera* is characterized by its heavy, smooth, dorsal notopodial spines …" where Moore (1910) described the notochaetae as "roughened by numerous small tubercles." Brent reported that, careful examination of vouchers of *A. armifera* from LACSD, revealed the presence of asperites on dorsal notochaetae.

Brent recommends retaining *Aphrodita raripillata* as a valid taxon. As part of his review of *Aphrodita* species, LACSD currently have possible reports of *A. raripillata* (fitting Essenberg's original description) from shallow benthic grabs (30-61m) and in 23m trawls.

Next up was *Aphrodita japonica* Marenzeller, 1879, and its junior synonym, *Aphrodita cryptommata* Essenberg, 1917. *A. cryptommata* was placed into synonymy with *A. japonica* by Hartman (1939) with the following statements: 1) "*A. cryptommata* Essenberg (1917, p. 409) must be referred to *A. japonica* Marenzeller (1879, p. 111), one of the commonest species of *Aphrodita* dredged in fairly shallow waters from southern California southward." 2) "The description of *A. cryptommata* Essenberg agrees well with that of *A. japonica* save for the statement that in the former the elytra are squarish along their medial margins. The shape of the elytra is similar, however, if the inner edge be slightly cut away, as sometimes happens when the dorsal felt is cut apart." Hartman (1939) provided no other justification for her synonymy. She did not look at type material. A comparison of some key characters shown below (from the original descriptions) illustrate the differences.

Species	*Aphrodita japonica*	*Aphrodita cryptommata*
Type Locality	Southern Japan	Southern California (Newport)
Type Depth	<20m	55-185m
Dorsal Notochaetae	Without Asperites ??	Without Asperites
Inferior Neurochaetae	Falcate; Smooth or Sheathed, or Sheath Frayed Appearing Pilose	Without Sheaths or Pilose Tips
Median Antennae	Long Style	Short Style

Hartman (1939) placed the two species in synonymy without providing any evidence other than the two statements above and confusion over the characteristics of the neurochaetae have not helped in clarifying the situation. Marenzeller (1879) described *Aphrodita japonica* from Janapn in shallow water (<20m); with smooth neurochaetae and a long median antennae but did not give the size of the specimen examined. In his all too brief description, Moore (1903) expanded the depth range to 306m and assumed that the smooth spines described by Marenzeller are the result of wear, as his specimen had pilose neurochaetae, but did not mention the median antennae or the size of the specimen examined. Moore (1908) expanded the range to Alaska and Canada and the depth to 480m. He reinforced the "worn smooth with age" aspect of the neurochaetae while examining specimens 14-80 mm in length but did not mention the median antennae.

Moore (1910) expanded the range south to San Diego and the depth to 1300m. The neurochaete were again mentioned to be worn smooth with age, but he cautioned that the long median antennae should be used with caution as it is often lost or broken. The specimens examined were between 28-155 mm long. Hartman (1939) expanded the range south to Ecuador and Panama. She mentioned the wearing with age of the neurochaete in specimens up to 48 mm but did not mention the median antennae. Pettibone (1953), while describing specimens from Washington, reinforced the changing state of the neurochaetae in individuals from 30-180 mm in length. She also described the median antennae as short. This is the first evidence in the literature that we may be dealing with multiple species under the *Aphrodita japonica* name. Hartman (1968) restricted the range to Japan, and Alaska to southern California, in depths to 150m. Imajima (2003), while examining material from Sagami Bay, Japan (near the type locality of *A. japonica*), described the dorsal notochaetae as being "densely tuberculated" and the lateral notochaetae as being "finely tuberculated basally". This character may prove useful in separating out local forms from what has been recorded as *A. japonica* in the past.

Essenberg (1917) described *Aphrodita cryptomatta* with smooth neurochaetae with narrow, bluntly terminating ends and a median antennae that is "very short, consisting of a short ceratophore and a short style." Essenberg's description was based on specimens that were 28 & 29 mm in length. Following the assumptions of Moore, Hartman and Pettibone mentioned that the pilose neurochaetae wear smooth with age. *A. cryptomatta* should be expected to have pilose neurochaetae since their descriptions were based on small individuals, but their specimens had smooth neurochaetae. Based on the discrepancies in the neurochaetal ornamentation, the difference in median antennae length, and now the apparent (Imajima 2003) presence or absence of asperites in the dorsal notochaetae of *A. japonica*, Brent recommends treating *A. cryptomatta* as a valid species. Due to the extreme distribution and potential depth range reported in the literature, and the now apparent confusion in the description of *A. japonica*, Brent feels that local specimens of *A. japonica* should be considered a species complex. LACSD has not yet completed their review of *A. japonica* but many of them key more closely to *A. solitaria* Essenberg, 1917.

Publication Date: June 2023

Moving on to the next questionable synonymy is *Aphrodita refulgida* Moore, 1910 and *A. solitaria* Essenberg, 1917. Hartman (1939) placed *A. solitaria* into synonymy with *A. refulgida* with the following statements: 1) "*Aphrodita solitaria* Essenberg (1917, p. 408) may be the same as *A. refulgida* Moore (1910, p. 376). Both have pointed neuropodial setae (pl. 1, figs. 7, 8) in addition to other identical characters, and both probably originate from southern California." 2) "The description of *A. solitaria* Essenberg agrees reasonably well with Moore's description of *A. refulgida*." A comparison of some key characters shown below (from the original descriptions) illustrate the differences.

Species	***Aphrodita refulgida***	***Aphrodita solitaria***
Type Locality	Monterey Bay, CA	Southern California
Type Depth	66-93m	unknown
Lateral Fibers	Iridescent Green	Colorless
Neurochaetal Tips	Smooth, Nearly Straight	Strongly Pilose, Straight

Moore (1910) described *Aphrodita refulgida* as having brilliant green lateral fibers and neurochaetae that are smooth and straight, terminating in fine acuminate tips. The iridescent green lateral fibers are very conspicuous and do not fade easily after fixation (pers. obs.). Essenberg (1917) described *A. solitaria* as having colorless lateral fibers and neurochaetae with densely pilose tips. Based on these differences in characters, Brent would treat *A. solitaria* as a valid species. LACSD has not yet completed a review of *A. refulgida*, but as mentioned above, LACSD has some possible reports of *A. solitaria* from 305m trawls that were previously identified as *A. japonica*.

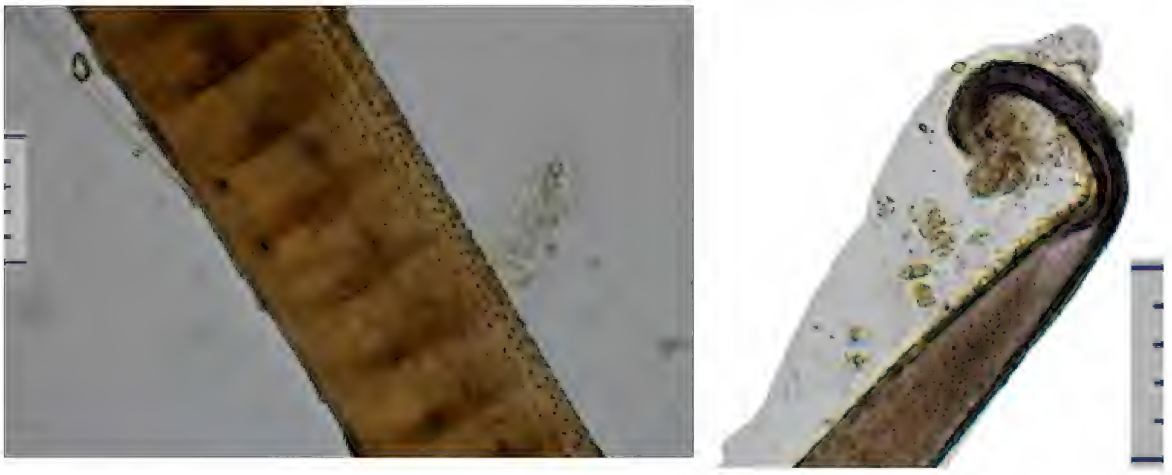
The final set of synonymies to explore are that of *Aphrodita negligens* Moore, 1905, *A. castanea* Moore, 1910 and *A. californica* Essenberg, 1917. Hartman (1936) placed *A. californica* into synonymy with *A. castanea* with the following sentence - "*Aphrodita castanea* Moore, 1910 = *A. californica* Essenberg, 1917." However, by 1968 she had reversed this decision as both species are in her key in the Atlas (Hartman 1968). Pettibone (1953) placed *A. castanea* into synonymy with *A. negligens*. This also made *A. californica* a synonym of *A. negligens* by extension.

Species	***Aphrodita negligens***	***Aphrodita castanea***	***Aphrodita californica***
Type Locality	Suruga Bay, Japan	Monterey Bay, CA	Coronado, CA
Type Depth	62m	66-565m	6m
Dorsal Notochaetae	Without Asperites	With Asperites on Dorsal Side of Shaft	Without Asperites
Notochaetal Tips	Taper Gradually to Hooked Tip	With Constriction at Base of Hooked Tip	Taper Gradually to Hooked Tip
Neurochaetal Tips	With Pilose Tips	With Pilose Tips	With Smooth Tips

Moore (1905) described *Aphrodita negligens* from Japanese waters as having iridescent lateral fibers (though the color is a dull green, not brilliant like *A. refulgida*), dorsal notochaetae without asperites and gradually tapering to hooked tips and pilose neurochaetae. Since this species was described from Japan it is possible that true *A. negligens* is not present in southern California and reports of such may prove to be *A. refulgida* due, in part, to the iridescent green sheen of the lateral fibers. LACSD reports this species from 61m in benthic grabs and in trawls from 61-305m. A review of *A. negligens* at LACSD has not yet taken place.

Moore (1910) described *Aphrodita castanea* as having a gray body, dorsal notochaetae with a constricted tip and asperites on the convex side, and pilose neurochaetae. These diagnostic differences have led SCAMIT to recognize *A. castanea* as a valid species. LACSD reports *A. castanea* in benthic grabs from 30-152m and in trawls from 61-305m.

Aphrodita castanea Moore, 1910 Left – Asperites on dorsal notochaetae; Right – Hooked tip with constriction (Images by B. Haggin, LACSD Station T5-305, 305m; scale=0.05mm(0.01mm)



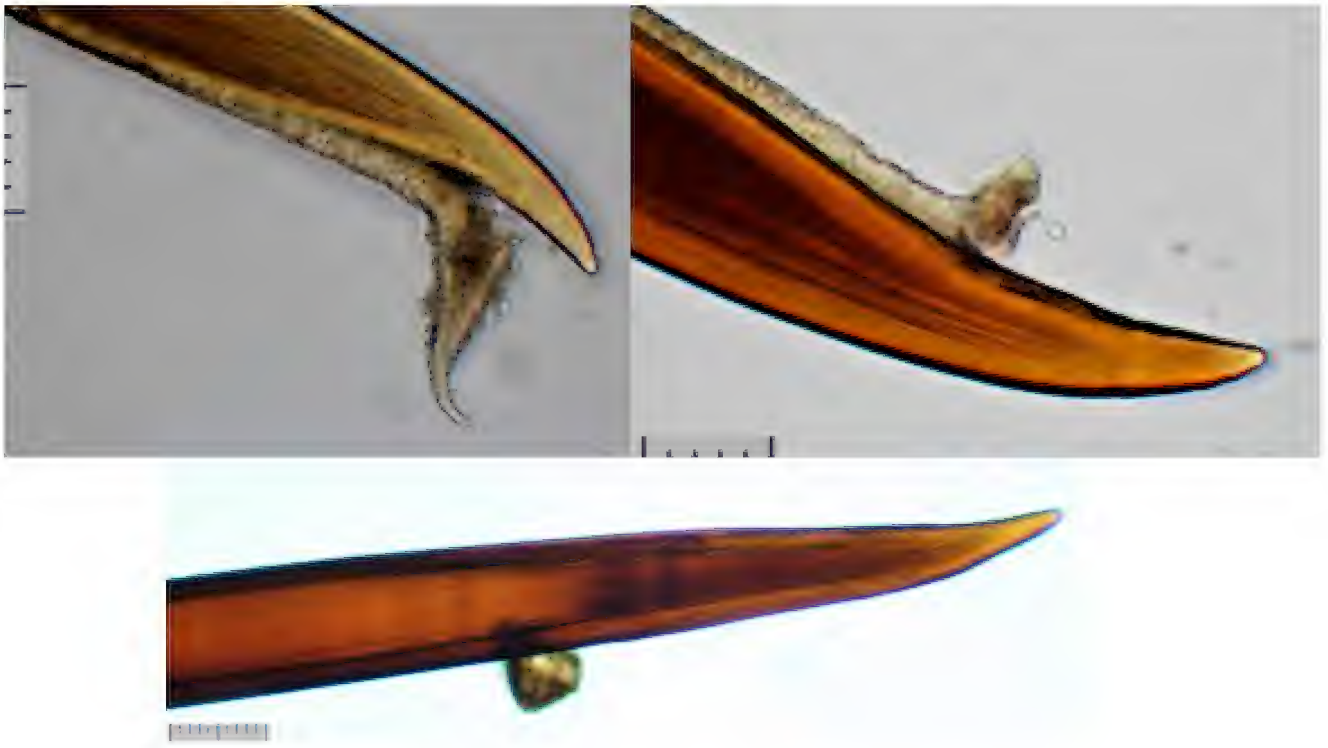
Essenberg (1917) described *Aphrodita californica* from San Diego in 6m of water. It was described as having smooth notochaetae with a tapering, hooked tip and smooth neurochaetae. Based on the differences detailed above, Brent recommends treating *A. californica* as a valid species. LACSD has not yet completed a review of *Aphrodita* species and does not yet have any reports of possible *A. californica*. Other SCAMIT taxonomists are encouraged to check their own collections for possible specimens.

The final species reviewed was *Aphrodita* sp A Rossi, 1978 §. A voucher sheet for this provisional species was not found; characters listed below were gleaned from an old SCAMIT key "A Key to the Species of *Aphrodita* (Polychaeta) from the West Coast of North America" by Mark Rossi (1978). The characters are as follows:

- Dorsal notochaetae without asperites, 2X thicker than superior neurochaetae
- Lateral notochaetae iridescent golden-green
- Median antennae cirriform

It is Brent's goal to visit the NHMLAC and view Essenberg's type material to determine the validity of the synonymies proposed by Hartman (1936, 1939) and Pettibone (1953). An update will be provided once this occurs. Other congeners reported from the region but not by SCAMIT are *Aphrodita falcifera* Hartman, 1939 (Cedros Island, Mexico), *A. mexicana* Kudenov, 1975 (Western Mexico; 29-38m), *A. parva* Moore, 1905 (British Columbia, Canada; 200-311m), and *A. sonorae* Kudenov, 1975 (Gulf of California, Mexico; 36m).

Aphrodita castanea Moore, 1910 Upper Left – Inferior neurochaetae, scale=0.05mm(0.01mm); Upper Right – Median neurochaetae, scale=0.05mm(0.01mm); Bottom – Superior neurochaetae, scale=0.01mm (Images by B. Haggin, LACSD Station T5-305, 305m)



Brent's updated key to the *Aphrodita* was also presented. The Key to the Genus *Aphrodita* of SCAMIT (Ed. 13) and Local Provisional Species (Haggin, 2023), and a character table in Excel format, have been uploaded to the SCAMIT toolbox. The key treats all of the species mentioned above as provisionally valid and they are included within. Their names are left in RED font to distinguish them from the currently accepted species. The presentation given at the meeting has also been converted to a pdf and uploaded to the toolbox.

The meeting then proceeded to cover a number of keys that Brent has been updating to include local provisional species. The first was for the Family Glyceridae. This key was modified from the Glyceridae key in the MMS Atlas and incorporated provisional species *Glycera* sp LA1 Parker, 1999 §. Since the meeting, *Glycera* sp LA1 has received a SCAMIT designation and was published in SCAMIT Newsletter 39(6) as *Glycera* sp B SCAMIT, 2022 §. *Key to the Family Glyceridae of SCAMIT (Ed.13) and Local Provisional Species* (Haggin, 2023) has been updated to reflect this change and has been uploaded to the SCAMIT toolbox. A table of characters of the local *Glycera* spp was included.

The next key was for the Family Goniadidae. This key was modified from the Goniadidae key in the MMS Atlas and incorporated provisional species *Goniada* sp LA1 Haggin, 2021 §. Since the meeting, *Goniada* sp LA1 has received a SCAMIT designation and is published in this newsletter as *Goniada* sp A SCAMIT, 2023 §. The *Key to the Family Goniadidae of SCAMIT (Ed. 13) and Local Provisional Species* (Haggin, 2023) has been updated to reflect this change and has been published to the SCAMIT toolbox. A table of characters of the Family Goniadidae has been added to the key.

The next key presented was for the Genus *Magelona*. This key was modified from the Key to the West Coast *Magelona* by D. Norris (1999), which was based on D. Pasko's (1991) key and Hobson & Banse (1981). The purpose of this key was to consolidate multiple sections of keys found at LACSD that were missing parts of couplets. The updated key also incorporated methyl green stain patterns when information was available. The *Key to the Magelona of SCAMIT (Ed. 13) and Local Provisional Species* (Haggin, 2023) has been uploaded to the SCAMIT toolbox.

The next key was a newer version of Brent's key to the local Orbiniidae. This key was updated from his 2018 key by limiting it to only species on the SCAMIT Species List or local provisional species. The 2018 key included all Orbiniids reported from the Northeastern Pacific. The *Key to the Family Orbiniidae of SCAMIT (Ed. 13) and Local Provisional Species* (Haggin, 2023) has been uploaded to the SCAMIT toolbox. A character table is also available on the SCAMIT toolbox under the Family Orbiniidae – Other Useful Tools – Orbiniidae table.xlsx.

The final key presented was an updated key to the Spionidae. It was modified from the key to the Family Spionidae in the MMS Atlas and the Lovell & Pasko Spionidae key. It includes all Spionid species listed in SCAMIT Ed. 13, and all local provisional species known at the time. It also incorporates all nomenclatural changes since the Lovell & Pasko key, mostly in the *Spiophanes*, and incorporates methyl green stain patterns when known. The key also includes all the local Polydorids and their allies to be as comprehensive as possible. Brent's much expanded *Key to the Family Spionidae of SCAMIT (Ed. 13) and Local Provisional Species* (Haggin, 2023) has been uploaded to the toolbox on the SCAMIT Website.

As taxonomy is constantly changing, these keys are works in progress. Please email Brent (bhaggin@lacsd.org) with any comments or suggested improvements, and he will incorporate them and update the keys.

10 JANUARY 2022, SCAMIT PROVISIONAL SPECIES TRIAGE, K. BARWICK, ZOOM

Attendance: Kelvin Barwick, OCSD; Brent Haggin, Norbert Lee, Christine Boren, Don Cadien, JoAnne Linnenbrink, LACSD; Leslie Harris, NHMLAC; Greg Lyon, Erin Oderlin, Cody Larsen, Craig Campbell, CLAEMD; Tony Phillips, Dean Pasko, Larry Lovell, DCE; Wendy Enright, Megan Lilly, Maiko Kasuya, Andrew Davenport, Ricardo Martinez-Lara, Veronica Rodriguez-Villanueva, Zoë Scott, Lauren Valentino, CSD; Alison Fisher, Ashley Loveland, Jessica Donald, SFPUC; Angelica Zavala Lopez, MTS.

Kelvin started the day by noting that it is SCAMIT's 40 year anniversary and asked if the Executive Committee had anything planned to which there was a cricketed silence.

With announcements over Kelvin shared his presentation on the provisional species found on the SCAMIT List. First he reviewed the reasons for erecting provisional species. These included:

- Documentation of possible new species, to you, to your lab, to SCAMIT, to science
- Sort out problems of local diversity where literature is lacking and/or contradictory
- Place holder in data sets: inhouse, regional, SCAMIT

This stimulated a discussion about the purpose and usefulness of provisional species. Leslie noted their usefulness at the Museum since it designates an animal as unique. Accordingly, they are provided their own "shelf space" so visiting researchers can examine them if interested. Don

noted that he creates many provisional species for consulting work but he doesn't think all of them should be added to the Species List. He also remarked on the difference of POTW in-house provisionals and SCAMIT provisionals versus those in published literature. Those that have been described and published are species with non-standard nomenclature, but are not provisionals in the same sense as used by SCAMIT. It was agreed that those species on the List that are published with non-standard nomenclature do not need to be reviewed during the vetting process.

With everyone in agreement Kelvin began to solicit help and a list of volunteers was drawn up. He revealed a spreadsheet that will be used to quantify and qualify the information currently available on SCAMIT.org for each taxa. Once this is completed, a decision can be made on what to keep and what to remove.

Leslie had the floor next and wanted to talk about inaturalist. Leslie is lead for the polychaetes and she is uploading her live photo collections. She is also adding images of any phyla she photographs not just polychaetes. She encouraged others to upload photos as well. To view her images go to:

https://www.inaturalist.org/observations?user_id=leslieh

14 FEBRUARY 2022, ADVENTURES IN POLYCHAETING, ZOOM

Attendance: Guest speaker: Sergio Salazar-Vallejo (ECOSUR-Chetumal); Brent Haggin, Christine Boren, Norbert Lee (LACSD); Kelvin Barwick (OCSD); Leslie Harris (NHMLAC); Erin Oderlin, Greg Lyon, Jennifer Smolenski (CLAEMD); Ricardo Martinez, Maiko Kasuya, Adam Webb, Veronica Rodriquez (CSD); Larry Lovell, Tony Phillips (DCE); Diane O'Donohue, Jessica Donald, Heather Peterson (CCSF); Theresa Diaz (MBC); Angelica Zavala Lopez (MTS); Dany Burgess, WADOE; Dot Norris, Retired.

Brent opened the business portion of the meeting with a reminder that anyone still interested in running for SCAMIT office next year needs to get their nominations in to a current SCAMIT Officer by the end of February for inclusion on the ballot.

Kelvin discussed delays in receiving the newest edition of Annelida (Rouse, et al. 2022). The publisher, in the United Kingdom, stated that it has been lost in transit and another copy has been dispatched. It was still available for purchase from Oxford University press online.

Sergio Salazar-Vallejo presented some preliminary research of his and his grad students' work on *Chloeia*. The presentation detailed variations within the local *Chloeia pinnata*; a confirmation of *Chloeia entypa* Chamberlin, 1919 as a valid deep-water species; and a brief look at 2 new *Chloeia* species, 1 from the Gulf of California and 1 from the Gulf of Mexico.

Kelvin led a discussion reviewing a few of the provisional species currently residing on the Provisional Species Website. The following species were reviewed:

- *Lumbrinerides* sp OC1 Barwick, 2020 § - Kelvin will review his specimen against *Lumbrineriopsis* sp SD1 and confirm placement within *Lumbrinerides*. Brent identified four specimens of *Lumbrinerides* sp OC1 this past survey and will double check them and send them to Kelvin for further investigation.

- *Plakosyllis* sp OC1 Barwick, 2020 § - Kelvin will do additional review of his provisional against *Plakosyllis americana* and report back with his findings. He will also compare his species to *Xenosyllis* which is typically associated with bryozoans, dorso-ventrally flattened, has articulated cirri and antennae and dorsally the segments are "wrinkled". Brent will try to find the original *Plakosyllis* sp LA1 and make comparisons to *Plakosyllis* sp OC1.
- *Onuphis* sp LA1 Haggin, 2019 § - Brent will get specimens of *Onuphis eremita parva* from CSD to make further investigations.
- *Glycera* sp LA1 Haggin, 2021 § - After discussion of proper naming conventions, Brent will update the voucher sheet to reflect the authorship as Parker, 1999 § as this voucher sheet was a re-description and not a new description. Other minor edits will be made and this voucher sheet will move toward getting a SCAMIT name.
- *Goniada* sp LA1 Haggin, 2021 § - Brent will make a few minor edits to this voucher sheet and it will move toward getting a SCAMIT name.
- *Phyllochaetopterus* sp LA1 Haggin, 2019 § - Brent showed preliminary images of a Bight '18 collected species of *Phyllochaetopterus* from deep water. This species has a distinctive banding pattern in the ventral thorax. Leslie indicated that according to currently unpublished data, species of *Phyllochaetopterus* and *Spiochaetopterus* do not separate genetically and thus both groups are polyphyletic as currently described.

Leslie next led a discussion covering multiple topics. She began with a review of new papers that deal with some re-descriptions of local species:

Radashevsky et. al. 2021. This paper addresses *Marenzelleria* spp and may be more applicable to San Francisco and Puget Sound collections.

Maciolek & Blake. 2021. This paper addresses *Microspio* spp and contains a great re-description of *Microspio pigmentata* with high quality photos.

Leslie then presented her preliminary work on the genus *Phylo* (Orbiniidae). The SCAMIT Species List has 2 species currently listed: *P. nudus* (Moore, 1911) described from California and *P. felix* Kinberg, 1866 described from Brazil. Also commonly reported from this coast, though not by SCAMIT, is *P. ornatus* (Verrill, 1873) described from Massachusetts. Synonymized with *P. ornatus* by Hartman (1959) was *P. macginitii* (Berkeley & Berkeley, 1941) described from Newport Bay. In order to validate local species Leslie is looking for *Phylo* specimens from shallow water. She wants to document character states and ranges for comparison to the original descriptions of the 4 species. Literature pertinent to this group is Blake 2021. This paper has current images and descriptions of *P. ornatus* and *P. felix* though with synonymies these descriptions may be combinations of characters.

Leslie finished her presentation with a new paper on the genus *Anobothrus* (Ampharetidae), Saring et. al. 2022. This paper presents a key to valid species of *Anobothrus* but it is incorrect. Leslie has an updated version of the key if interested. As a result of her investigations, it has come to her attention that what we have locally called *A. gracilis* (Malmgren, 1866) (described from Sweden) is actually *A. bimaculatus* Fauchald, 1972 (described from Mexico). One of the key differences between the two species is in the notochaetae; all of the notochaetae in *A. gracilis* should be hirsute, while only the notochaetae of segment 12 should be hirsute in *A. bimaculatus*. Leslie is creating a voucher sheet detailing the differences and the change in nomenclature we should be using. Leslie also discussed the presence of 2 additional *Anobothrus* provisional species she has found. Both come from the Channel Islands so they may be of concern for Bight '23.

They are small species with one specimen, which was mature and gravid only approximately 6mm total length.

Kelvin showed images of an unidentified *Clavadoce* (Phyllodocidae) that they found as bycatch on their recent trawls. Leslie commented that she had never seen it before and that it was new.

The day was finished with Leslie showing images of living *Nereiphylla* sp. (Phyllodocidae) to highlight the extreme color variation present within a single species.

PROVISIONAL SPECIES VOUCHER SHEETS

Attached to this newsletter are some of the polychaete provisional species voucher sheets discussed, as well as a provisional sheet for a deep water phoronid. Due to the large size of this newsletter it was decided that the remaining polychaete species voucher sheets will be appended to Vol 40 no 6.

- *Chaetozone* sp D
- *Goniada* sp A
- *Jasmineira* sp C
- *Kirkegaardia* sp B
- and for the non polychaete - Phoronidae sp DC1

LITERATURE CITED

Berkeley, C. 1972. Further records of Polychaeta new to British Columbia with comments on some others. Canadian Journal of Zoology 50(4): 451-456.

Berkeley, E. & Berkeley, C. 1941. On a collection of Polychaeta from Southern California. Bulletin of the Southern California Academy of Sciences 40(1): 16-60.

Blake, J. A. 1995. Family Aphroditidae Malmgren, 1867. pages 99-104. IN: Blake, J. A., Hilbig, B. and Scott, P. H. Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. 5 - The Annelida Part 2. Polychaeta: Phyllodocida (Syllidae and scale-bearing families), Amphinomida, and Eunicida. Santa Barbara Museum of Natural History. Santa Barbara.

Blake, J. A. 2021. New species and records of Orbiniidae (Annelida, Polychaeta) from continental shelf and slope depths of the Western North Atlantic Ocean. Zootaxa. 4930(1): 1-123.

de León-González, J. A. 1994. Soft bottom polychaetes from the western coast of Baja California Sur, Mexico. 4. Onuphidae. Cahiers Biologie Marine 35: 57-67.

Essenberg, C. 1917. On some new species of Aphroditidae from the coast of California. University of California Publications in Zoology 16(22): 401-430.

Fauchald, K. 1968. Onuphidae (Polychaeta) from Western Mexico. Allan Hancock Monographs in Marine Biology 3: 1-82.

Fauchald, K. 1980. Onuphidae (Polychaeta) from Belize, Central America, with notes on related taxa. Proceedings of the Biological Society of Washington 93(3): 797-829.

Fauchald, K. 1982. Revision of *Onuphis*, *Nothria*, and *Paradiopatra* (Polychaeta: Onuphidae) based upon type material. Smithsonian Contributions to Zoology 356: 1-109.

Fauchald, K., Granados-Barba, A., & Solís-Weiss, V. 2009. Polychaeta (Annelida) of the Gulf of Mexico, Pp. 751–788 in D.L. Felder and D.K. Camp (eds.). Gulf of Mexico. Origin, Waters, and Biota. Volume 1, Biodiversity. Texas A&M University Press, College Station, Texas.

Gil, J. & Machado, M. 2014. A new species of *Onuphis* (Polychaeta: Onuphidae) from Southern Portugal, with comments on the validity of O. pancerii Claparède, 1868. Zootaxa 3860(4): 343-360.

Glasby, C. J., Read, G. B., Lee, K. E., Blakemore, R. J., Fraser, P. M., Pinder, A. M., Erseus, C., Moser, W. E., Burreson, E. M., Govedich, F. R., Davies, R. W. & Dawson, E. W. 2009. Phylum Annelida: bristleworms, earthworms, leeches, in: Gordon, D. P. (Ed.) (2009). New Zealand inventory of biodiversity: 1. Kingdom Animalia: Radiata, Lophotrochozoa, Deuterostomia. pp. 312-358.

Harris, L. H. 2003. West Coast Onuphid Species - British Columbia to Western Mexico. NHMLAC/SCAMIT Handout.

Hartman, O. 1936. Nomenclatural changes involving California polychaete worms. Journal of the Washington Academy of Sciences 26(1): 31-32.

Hartman, O. 1938. Annotated list of the types of polychaetous annelids in the Museum of Comparative Zoology. Bulletin of the Museum of Comparative Zoology at Harvard College 85(1): 3-31, plates 1-3.

Hartman, O. 1939. Polychaetous annelids. Part I. Aphroditidae to Pisionidae. Allan Hancock Pacific Expeditions 7(1): 1-156.

Hartman, O. 1944. Polychaetous Annelids. Part V. Eunicea. Allan Hancock Pacific Expeditions 10(1): 1-237.

Hartman, O. 1968. Atlas of the Errantiate Polychaetous Annelids from California. Los Angeles, Ca, University of California, Allan Hancock Foundation.

Hilbig, B. 1995. Family Onuphidae Kinberg, 1865. pages 229-262. IN: Blake, J. A., Hilbig, B., & Scott, P. H. Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. 5 - The Annelida Part 2. Polychaeta: Phyllodocida (Syllidae and scale-bearing families), Amphinomida, and Eunicida. Santa Barbara Museum of Natural History. Santa Barbara.

Hobson, K. D. 1971. Some polychaetes of the superfamily Eunicea from the north Pacific and north Atlantic Oceans. Proceedings of the Biological Society of Washington 83(47): 527-544.

Hutchings, P. A. & McRae, J. 1993. The Aphroditidae (Polychaeta) from Australia, together with a redescription of the Aphroditidae collected during the Siboga Expedition. Records of the Australian Museum 45: 279-363.

Imajima, M. 2003. Polychaetous Annelids from Sagami Bay and Sagami Sea Collected by the Emperor Showa of Japan and Deposited at the Showa Memorial Institute, National Science Museum, Tokyo (II). Orders included within the Phyllodocida, Amphinomida, Spintherida and Eunicida. National Science Museum Monographs 23: 1-221.

Johnson, H. P. 1901. The Polychaeta of the Puget Sound region. Proceedings of the Boston Society for Natural History 29(18): 381-437, plates 1-19.

Kinberg, J. G. H. 1865. Annulata nova. Öfversigt af Königlich Vetenskapsakademiens förhandlingar, Stockholm 21(10): 559-574.

Kudenov, J. D. 1975. Two new species of errant polychaetes from the Gulf of California, Mexico. Bulletin of the Southern California Academy of Sciences 74(2): 75-80.

Maciolek, N. J. & Blake, J. A. 2021. New species of *Microspio* Mesnil, 1896 (Annelida: Spionidae), with additions to the description of *M. pigmentata* (Reish, 1959) and comparative notes on all members of the genus. Proceedings of the Biological Society of Washington. 134: 265-293.

Marenzeller, E. von. 1879. Südjapanische Anneliden. I. (Amphinomea, Aphroditea, Lycoridea, Phyllodocea, Hesionea, Syllidea, Eunicea, Glycerea, Sternaspidea, Chaetopterea, Cirratulea, Amphictenea.). Denkschriften der Kaiserlichen Akademie der Wissenschaften, Mathematisch-naturwissenschaftliche Classe , Wien 41(2): 109-154, plates I-VI.

Monro, C. C. A. 1933. The Polychaeta Errantia collected by Dr. C. Crossland at Colón, in the Panama region, and the Galapagos Islands during the Expedition of the S.Y. 'St. George'. Proceedings of the Zoological Society of London 103(1): 1-96.

Moore, J. P. 1903. Polychaeta from the coastal slope of Japan and from Kamchatka and Bering Sea. Proceedings of the Academy of Natural Sciences of Philadelphia 55: 401-490, plates XXIII-XXVII.

Moore, J. P. 1904. New Polychaeta from California. Proceedings of the Academy of Natural Sciences of Philadelphia 56: 484-503, plates XXXVII-XXXVIII.

Moore, J. P. 1905. New species of Polychaeta from the North Pacific, chiefly from Alaskan waters. Proceedings of the Academy of Natural Sciences of Philadelphia 57: 525-554, plates XXXIV-XXXVI.

Moore, J. Percy. 1908. "Some Polychætous Annelids of the Northern Pacific Coast of North America." Proceedings of the Academy of Natural Sciences of Philadelphia 60, no. 2: 321–64. http://www.jstor.org/stable/4063221.

Moore, J. P. 1910. The polychaetous annelids dredged by the U.S.S. "Albatross" off the coast of Southern California in 1904: II. Polynoidae, Aphroditidae and Sigalionidae. Proceedings of the Academy of Natural Sciences of Philadelphia 62: 328-402, plates XXVIII-XXXIII.

Moore, J. P. 1911. The polychaetous annelids dredged by the U.S.S. ''Albatross" off the coast of Southern California in 1904. III. Euphrosynidae to Goniadidae. Proceedings of the Academy of Natural Sciences of Philadelphia 63: 234-318, plates XV-XXI.

Paxton, H. 1986. Revision of the *Rhamphobrachium* complex (Polychaeta: Onuphidae). Records of the Australian Museum 38(2): 75-104.

Pettibone, M. H. 1953. Some scale-bearing polychaetes of Puget Sound and adjacent waters. 1-89. University of Washington Press. Seattle.

Radashevsky, V. I. et. al. 2021. A review of the worldwide distribution of *Marenzelleria viridis*, with new records of *M. viridis*, *M. neglecta* and *Marenzelleria* sp. (Annelida: Spionidae). Zootaxa. 5081(3): 353-372.

Rossi, M. 1978. A Key to the Species of *Aphrodita* (Polychaeta) from the West Coast of North America. SCCWRP TSP 6(2): 3-5.

Rouse, G. W., F. Pleijel, and E. Tilic. 2022. Annelida. Oxford Press, Oxford, United Kingdom. 418pp.

Rupit-Arteaga, S. K., Hernández-Alcántara, P. & Solís-Weiss, V. 2013. Description of *Mooreonuphis bidentata* a new species of Onuphidae (Annelida: Polychaeta) from the Mexican Caribbean with remarks on the distribution of the genus. Journal of the Marine Biological Association of the United Kingdom 93(04): 981-990.

Saring, F. et. al. 2022. New species of *Anobothrus* (Ampharetidae, Polychaeta). European Journal of Taxonomy. 789: 130-152.

SCAMIT. 2021. A Taxonomic Listing of Benthic Macro- and Megainvertebrates from Infaunal & Epifaunal Monitoring and Research Programs in the Southern California Bight, Edition 13. Cadien DB, Lovell LL, Barwick KL, Haggin BM, eds. 203pp. (July 1, 2021)

Shisko, J. F. 1981. Five new polychaetes of the families Euncidae and Onuphidae, collected in 1975 and 1976 during the Southern California Baseline Project. Proceedings of the Biological Society of Washington 94(4): 968-983.

Treadwell, A. L. 1922. Polychaetous annelids collected at Friday Harbor, State of Washington, in February and March, 1920. Carnegie Institute of Washington Publication 312: 171-181.

Uebelacker, J. M. & Johnson, P. G. (eds). 1984. Taxonomic guide to the polychaetes of the Northern Gulf of Mexico. Final report to the Minerals Management Service, contract 14-12-001-29091. Volumes 1-7, Barry M. Vittor & Associates. Mobile, Alabama.

WoRMS

Please visit the SCAMIT Website at: www.scamit.org

SCAMIT OFFICERS

If you need any other information concerning SCAMIT please feel free to contact any of the officers at their e-mail addresses:

President	Brent Haggin	(562)908-4288 x 5672	bhaggin@lacsd.org
Vice-President	Leslie Harris	(213)763-3234	lharris@nhm.org
Secretary	Megan Lilly	(619)758-2336	mlilly@sandiego.gov
Treasurer	Erin Oderlin	(310)648-5477	erin.oderlin@lacity.org

SCAMIT is a 501(c)(3) charity. The newsletter is published every two months and is distributed freely to members in good standing. Membership is $20 for an electronic copy of the newsletter, available via the web site at www.scamit.org, and $35 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $65. All correspondences can be sent to the Secretary at the email address above or to:

SCAMIT
PO Box 50162
Long Beach, CA 90815

SCAMIT Newsletter
Vol. 40 no. 5 & 6

Voucher Sheet

B. Haggin
April, 2023

Species: *Chaetozone* sp D SCAMIT, 2023 §
Synonyms: *Chaetozone* sp LA2 Haggin, 2019 §

P-Code—see Discussion
ITI—Group 2

Family: Cirratulidae
Suborder: Cirratuliformia
Order: Terebellida
Infraclass: Canalipalpata
Subclass: Sedentaria
Class: Polychaeta
Phylum: Annelida

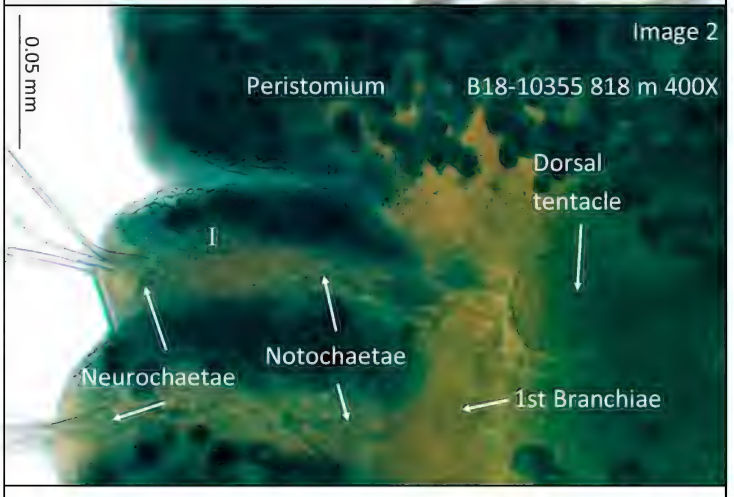
Diagnostic Characters:

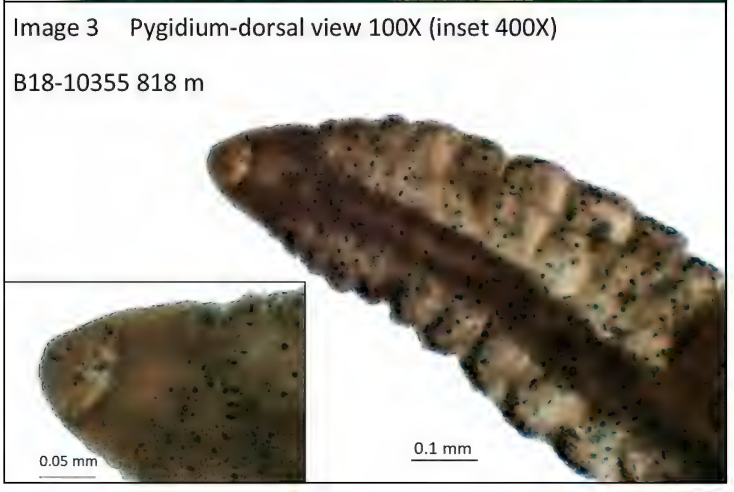
1) Individual is 7.48 mm long (entire) and 0.42 mm across the thorax (excluding chaetae).
2) Prostomium bluntly triangular, eyes present **(Image 1)**.
3) Dorsal tentacle inserted lateral to peristomial pad & just anterior to 1st branchiae on peristomium **(Image 2)**.
4) Thorax dorsoventrally compressed with 13 chaetigers, slightly crowded, with segments wider than long.
5) Abdomen rounded in cross-section with 44 abdominal chaetigers and 2 achaetous pre-pygidial segments.
6) Pygidium with terminal anus and ventral lobe **(Image 3)**.
7) Neuropodial spines present in thorax from chaetiger 8; slightly curved, bluntly pointed **(Images 4, 5, 6)**.
8) Notopodial spines present in abdomen from chaetiger 30; straight, bluntly pointed **(Images 5, 6)**.
9) Forming only partial cinctures posteriorly

Pigmentation/MGS:

1) Prostomium and peristomium staining intensely, with an unstained band in middle of prostomium/ peristomium (head) dorsally, unstained laterally (cheeks) and an unstained ventral patch posterior to the mouth **(Images 7, 8)**.
2) Chaetigerous segments with encircling stain bands, each segment unstained anteriorly, lightly staining around chaetal fascicles and heavily staining posteriorly; 1st 6 chaetigers the stain does not connect across the ventrum **(Images 7, 8)**.

** stain intensity decreasing overall toward pygidium **





All photos by B. Haggin

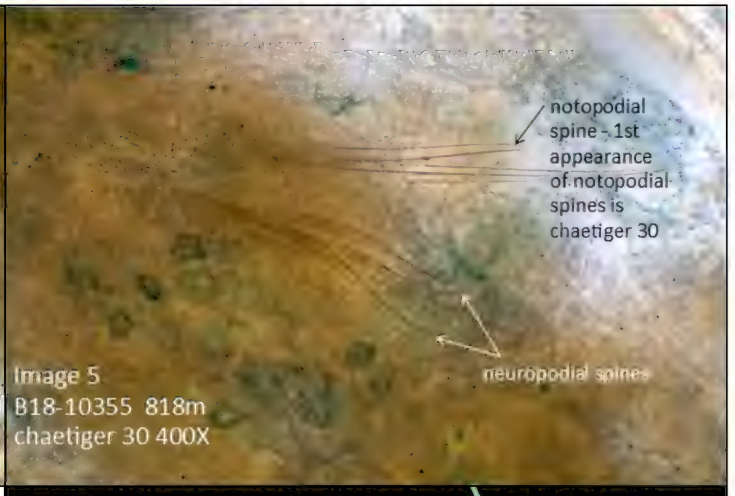
Chaetozone sp D

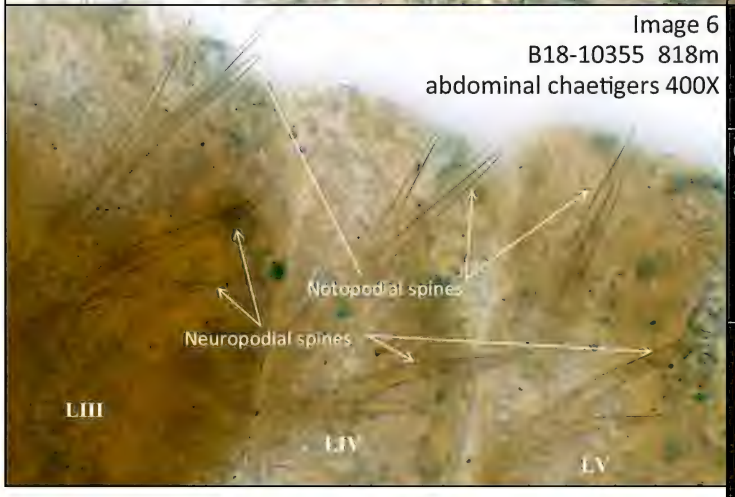
SCAMIT, 2023 §

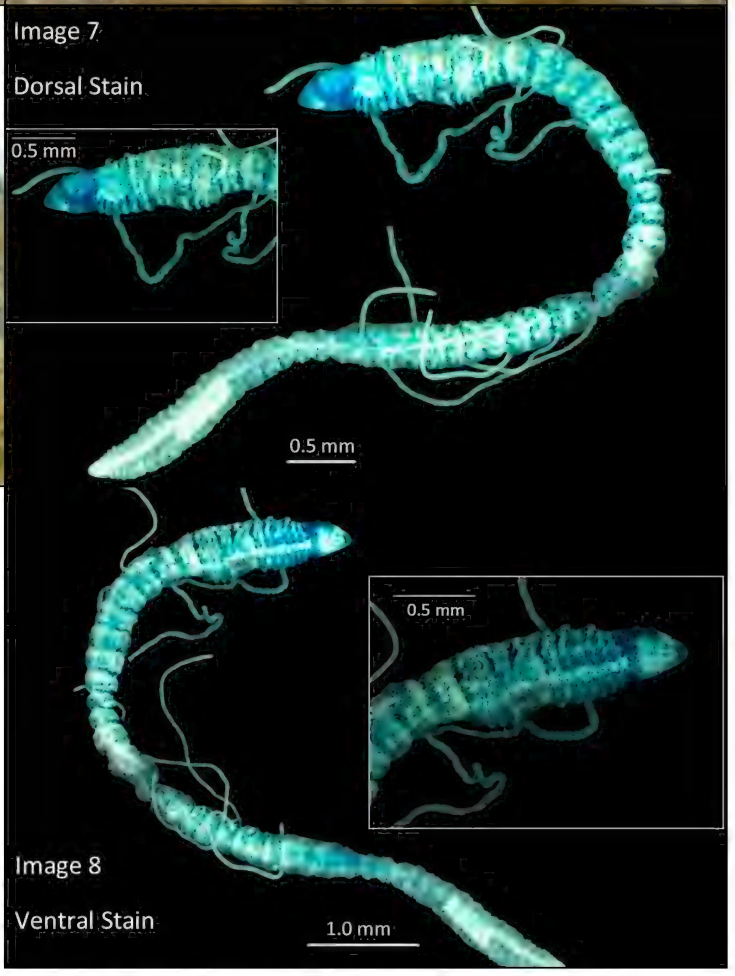
Voucher Sheet

B. Haggin

April, 2023


notopodial spine - 1st appearance of notopodial spines is chaetiger 30
neuropodial spines
Image 5
B18-10355 818m
chaetiger 30 400X





Material Examined:

B'18-10355—South of Pt. Dume, Santa Monica Basin/San Pedro Channel, 818 m (1 ind.) (33.88369N, 118.79006W—17AUG18)

Similar Species:

Chaetozone hartmanae Blake, 1996—*Chaetozone* sp D most closely resembles *Chaetozone hartmanae* in the shapes of the spines, straight in the notopodia and curved in the neuropodia. The two differ in the starting chaetiger of the neuropodial spines, chaetiger 33 in *C. hartmanae* and chaetiger 8 in *C.* sp D. The MGS pattern of the two also differ, with *C. hartmanae* having a near solid stain patch in the posterior thorax, little stain in the anterior thorax and abdominal stain concentrating just posterior to the chaetal fascicles. *Chaetozone* sp D has stain concentrated in the anterior thorax though not staining across the ventrum and near encircling stain bands in the abdomen. The holotype of *Chaetozone hartmanae* was described from 86 m off Santa Barbara, but then its distribution listed as 542-914 m (Blake, 1996). *Chaetozone hartmanae* is routinely collected by LACSD from 30 -60 m, with a few scattered records from 150 m. With the similarity in acicular spine morphology, it is possible that deeper water records of *C. hartmanae* may belong to this provisional species.

Chaetozone sp D

SCAMIT, 2023 §

Voucher Sheet
B. Haggin
April, 2023

Similar Species (cont.):

Chaetozone acuta Banse & Hobson, 1968 (sensu Blake, 1996)—*Chaetozone acuta* resembles *Chaetozone* sp D in the presence of eyes on the prostomium and in having incomplete cinctures of the posterior abdominal segments. The two differ in the start of neuropodial spines, 18-40 in *Chaetozone acuta* and chaetiger 8 in *C.* sp D, *Chaetozone* sp D lacks the obliquely shaped capillary chaetae found in *Chaetozone acuta*, and *C. acuta* lacks a distinctive MGS banding pattern in the thorax that is present in *Chaetozone* sp D.

Chaetozone armata Hartman, 1963 (sensu Blake, 1996)—*Chaetozone armata* is similar to *Chaetozone* sp D in having neuropodial spines present from far anterior chaetigers (chaetiger 1 for *C. armata*, chaetiger 8 for *C.* sp D) and the start of notopodial spines (16-25 for *C. armata*, 30 for *C.* sp D). The two differ in the position of the dorsal tentacle relative to the first branchiae, anterior to and inserted in the middle of the peristomium for *Chaetozone armata* and lateral to and inserted on the posterior of the peristomium in *Chaetozone* sp D. The posterior chaetigers of *Chaetozone armata* contain only a single acicular spine in each rami while *Chaetozone* sp D has 2 spines in each rami in posterior chaetigers. *Chaetozone armata* is known from shallow shelf depths up to 180 m, *C.* sp D is known only from deeper water in 818 m.

Chaetozone truebloodi Blake, 2019—*Chaetozone truebloodi* is similar in having neuropodial spines present from the far anterior (chaetiger 9 for *C. truebloodi*, chaetiger 8 for *C.* sp D) and the start of notopodial spines 22 vs. 30. *Chaetozone truebloodi* also differs in the position of the dorsal tentacle relative to the first branchiae, with it being anterior in *C. truebloodi* and lateral in *C.* sp D. *Chaetozone truebloodi* also differs in its MGS pattern, having only the prostomium staining intensly, the peristomium and few anterior chaetigers speckeled and the rest of the body unstained, while *C.* sp D has a distinctive stain pattern over most of its body. *Chaetozone truebloodi* is known only from the Clarion-Clipperton Fracture Zone in depths of 4880 m.

Habitat:

Chaetozone sp D is known from a single individual. It was collected in 818 m off Pt. Dume, Santa Monica Basin/San Pedro Channel in clayey silt. Also collected in the sample were the polychaetes *Protis pacifica* Moore, 1923; *Amage longibranchiata* Hartman, 1960; *Ampharete cornuta* (Hilbig, 2000); *Phyllochaetopterus* sp A SCAMIT, 2023 § (reported as *Phyllochaetopterus* sp LA1 Haggin, 2019 §); *Kirkegaardia* sp B SCAMIT, 2023 § (reported as *Kirkegaardia* sp LA1 Haggin, 2019 §); *Aricidea* (*Acmira*) sp LA1 Lovell, 2014 §; and an unidentified Hesionid.

Discussion:

Blake (2022) emended the generic diagnosis of *Chaetozone* to the following:

Prostomium conical to pointed, usually lacking eyespots, with a pair of small nuchal slits or depressions at posterior edge, sometimes pigmented. Peristomium with a single pair of grooved dorsal tentacles arising from posterior margin or sometimes more posterior on an achaetous anterior segment, or rarely on an anterior setiger. First pair of branchiae arising near dorsal tentacles, an achaetous segment or first setiger; sometimes with first two pairs of branchiae on a single anterior segment. Body usually expanded anteriorly and narrowed posteriorly, middle or posterior body segments sometimes moniliform; posterior end often expanded. Setae include capillaries on most setigers and acicular spines in neuropodia and notopodia, with spines typically concentrated in posterior segments, usually forming distinct armature with spines carried on cinctured segments with elevated membranes; cinctures with few to many spines sometimes encircling entire posterior end, accompanied with none to many alternating capillaries; bidentate spines sometimes present in juveniles or occasionally in ventral-most position of far posterior setigers of adults, accompanying unidentate spines in cinctures; some species with long, natatory-like capillary notosetae, sometimes limited to gravid individuals. Pygidium a simple lobe, disklike, with long terminal cirrus, or few short lobes.

Chaetozone sp D

SCAMIT, 2023 §

Voucher Sheet

B. Haggin

April, 2023

Discussion (cont.):

Blake (2015) remarked on the importance of details of the peristomium, position of the dorsal tentacle and branchiae, nature of the posterior cinctures and their associated acicular spines, and the pygidium in the description of new species. In 2018, Blake erected a new genus *Chaetocirratulus* to contain bitentaculate cirratulids that have little to no posterior cincture and few acicular spines throughout. He thought that local species *Chaetozone gracilis* (Moore, 1923) might belong in the new genus but did not move it at this time. Blake (2022) commented that the pointed prostomium and elongate body of *C. gracilis* (rather than rounded and fusiform) should keep it within the genus *Chaetozone*. While *Chaetozone* sp D has very few spines in each rami throughout, the species described within *Chaetocirratulus* have no notopodial spines or notopodial spines present in only the last few pre-pygidial segments similar to *Chaetozone gracilis*. Along with an elongate body and triangular prostomium, the placement of the provisional species in the genus *Chaetozone* seems justified.

The P-Value Tool file has a P-Code of "P108" for *Chaetozone hartmanae*. Based on the similarity in spine morphology, *Chaetozone* sp D would most likely have been identified as juvenile *Chaetozone hartmanae* in the past. I am unsure if *Chaetozone* sp D should inherit P-Code "P108" from *Chaetozone hartmanae*.

WoRMS currently lists 73 valid species of *Chaetozone* and SCAMIT Ed. 13 has 12 named species, including *Chaetozone setosa* Cmplx, and 5 provisional species. *Chaetozone* sp D would be the 6th provisional species when added in Edition 14.

References:

Blake, J. A. 1996. Family Cirratulidae Ryckholdt, 1851. Pages 263-384. IN: Blake, James A.; Hilbig, Brigitte; and Scott, Paul H. *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 6- The Annelida Part 3. Polychaeta: Orbiniidae to Cossuridae*. Santa Barbara Museum of Natural History. Santa Barbara.

Blake, J. A. 2015. New Species of *Chaetozone* and *Tharyx* (Polychaeta: Cirratulidae) from the Alaskan and Canadian Arctic and the Northeastern Pacific, including a description of the lectotype of *Chaetozone setosa* Malmgren from Spitsbergen in the Norwegian Arctic. *Zootaxa* 3919(3): 501-552.

Blake, J. A. 2018. Bitentaculate Cirratulidae (Annelida, Polychaeta) collected chiefly during cruises of the R/V *Anton Bruun*, USNS *Eltanin*, USCG *Glacier*, R/V *Hero*, RVIB *Nathaniel B. Palmer*, and R/V *Polarstern* from the Southern Ocean, Antarctica, and off Western South America. *Zootaxa* 4537(1): 1-130.

Blake, J. A. 2019. New species of Cirratulidae (Annelida, Polychaeta) from abyssal depths of the Clarion-Clipperton Fracture Zone, North Equatorial Pacific Ocean. *Zootaxa* 4629(2): 151-187.

Blake, J. A. 2022. New species and records of *Caulleriella*, *Chaetocirratulus* and *Chaetozone* (Annelida, Cirratulidae) from continental shelf and slope depths of the Western North Atlantic Ocean. *Zootaxa* 5113(1): 1-89.

Read, G. & Fauchald, K. (Ed.) 2023. World Polychaeta Database. *Chaetozone* Malmgren, 1867. Accessed through: World Register of Marine Species at: https://www.marinespecies.org/aphia.php?p=taxdetails&id=129242 on 2023-04-12

SCAMIT. 2021. *A Taxonomic Listing of Benthic Marco- and Megainvertebrates from Infaunal & Epifaunal Monitoring and Research Programs in the Southern California Bight, Edition 13*. Cadien, D. B., Lovell, L. L., Barwick, K. L., Haggin, B. M., eds. 203pp.

Chaetozone sp D

SCAMIT, 2023 §

Voucher Sheet

B. Haggin

April, 2023

Other Literature Consulted:

Blake, J. A. 2006. New species and records of deep-water Cirratulidae (Polychaeta) from off Northern California. *Scientia Marina* 70S3: 45-57.

Blake, J. A. & Lavesque, N. 2017. A new species of *Chaetozone* (Polychaeta, Cirratulidae) from the Bay of Biscay offshore France, together with a review of Chaetozone species from the North Atlantic and adjacent waters. *Zootaxa* 4312(3): 565-579.

Hartman, O. 1963. Submarine canyons of Southern California Part III. Systematics: Polychaetes. *Allan Hancock Pacific Expeditions* 27(3): 1-93.

Version History:

Version 1.0—Voucher sheet created (03MAR2020)

Version 1.1—Updated name to *Chaetozone* sp LA2 (*Chaetozone* sp LA1 occupied from B'03) (09MAR2020)

Version 2.0—Updated voucher sheet to new SCAMIT guidelines (04OCT2022)

Version 3.0—Updated name to *Chaetozone* sp D and author to SCAMIT, 2023 §; Updated Discussion section; Updated names of co-occurring provisional species (12APR2023)

Voucher Sheet

B. Haggin
April, 2023

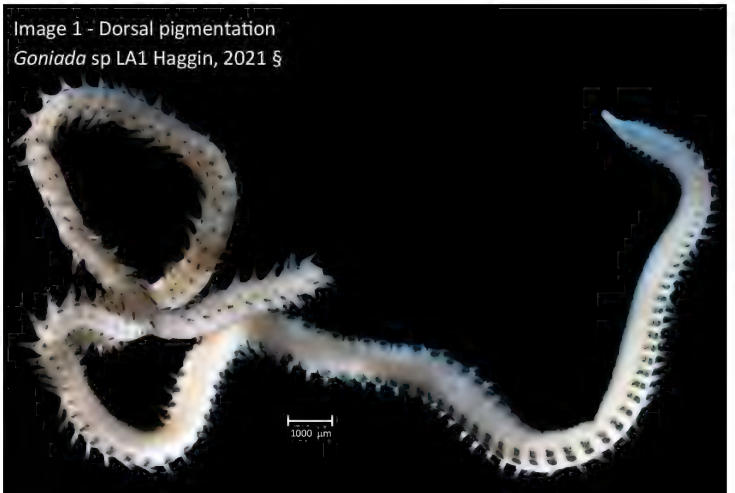
Species: *Goniada* sp A SCAMIT, 2023 §
Synonyms: *Goniada* sp LA1 Haggin, 2021 §

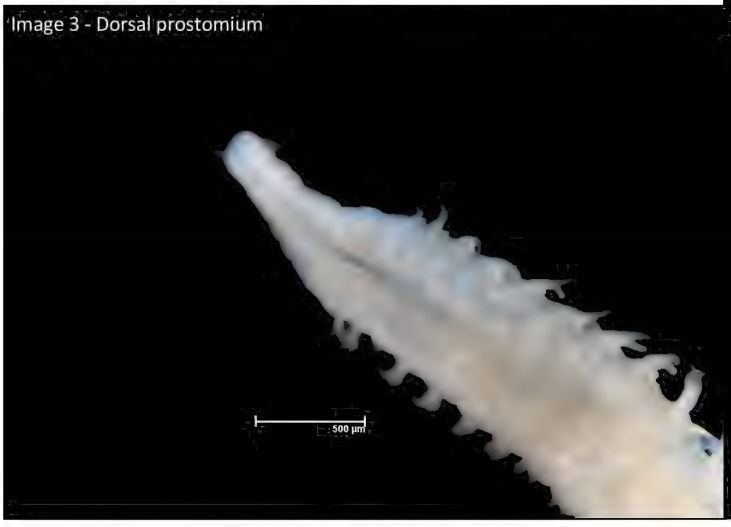
P-Code—none assigned
ITI—Group 2

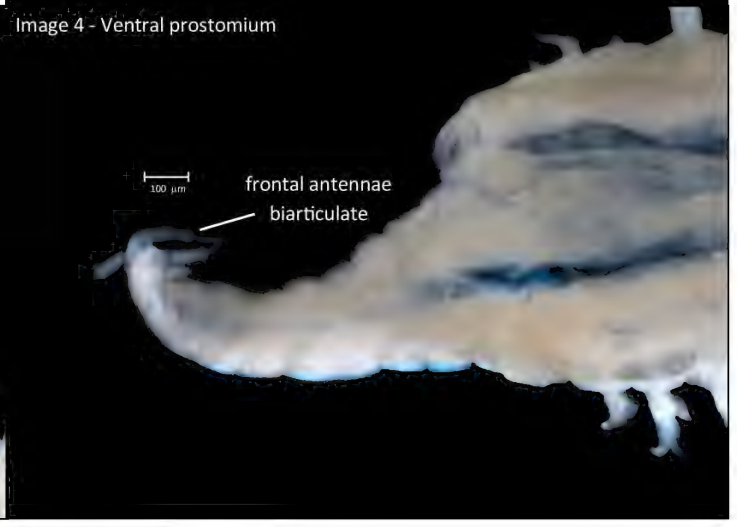
Family: Goniadidae
Suborder: Glyceriformia
Order: Phyllodocida
Subclass: Errantia
Class: Polychaeta
Phylum: Annelida

Diagnostic Characters:

1) Prostomium pointed, longer than wide, with 9 annulations **(Images 1, 2 & 3)**. Terminal ring with 4 bi-articulate antennae, distal articulations very narrow **(Image 4)**.
2) 1 pair of small, faint, subdermal eyes present.
3) Proboscideal organs of 1 kind: small and spherical with a central depression, beaks are absent **(Images 5 & 6)**.
4) Chevrons present, 14 on each side, edges fairly smooth **(Image 7)**.
5) Macrognaths and micrognaths missing or absent.
6) Parapodia uniramous through chaetiger 71.
7) Chaetiger 5 with 1 prechaetal & 1 postchaetal lobe, postchaetal lobe very small **(Image 8)**.
8) From chaetiger 8 a second, small prechaetal lobe is present **(Image 9)**.
9) Dorsal cirri asymmetrical, with broad base & long, tapering inferior cirrus **(Images 9, 11 & 12)**.
10) Ventral cirri digitiform, with a constricted tip; = to or longer than parapodia **(Image 9, inset)**.
11) Neuropodial prechaetal lobes digitate, postchaetal lobe triangular **(Image 9)**.
12) Notopodia present from chaetiger 72 **(Images 10 & 11)**; notopodial prechaetal lobe digitate, postchaetal lobe absent **(Image 12)**.







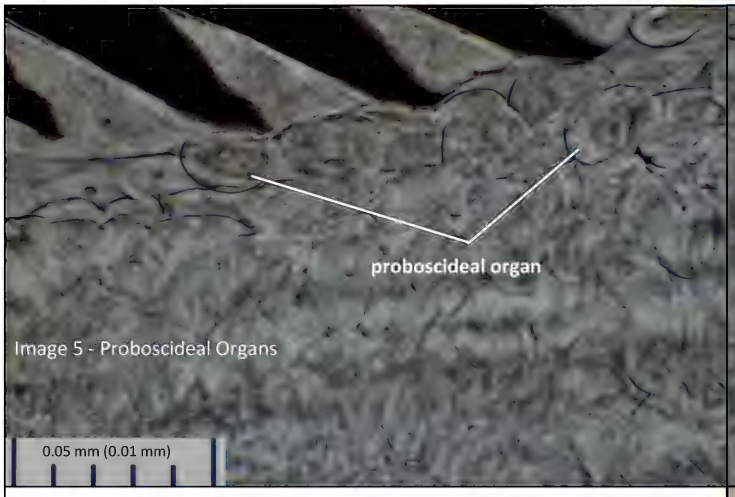
Goniada sp A

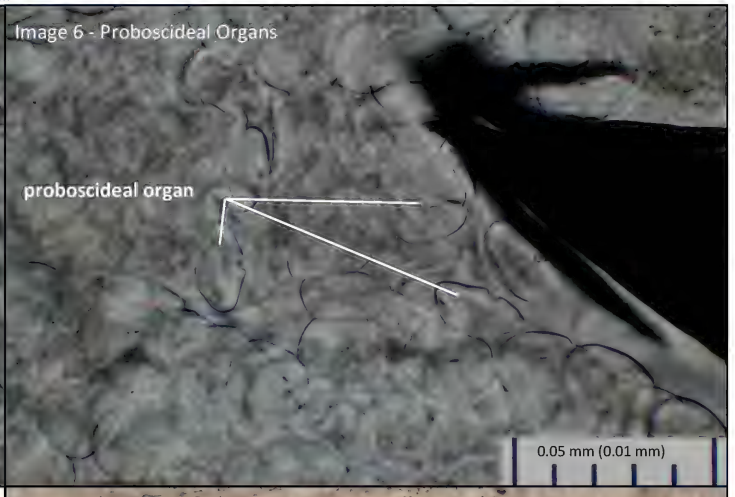
SCAMIT, 2023 §

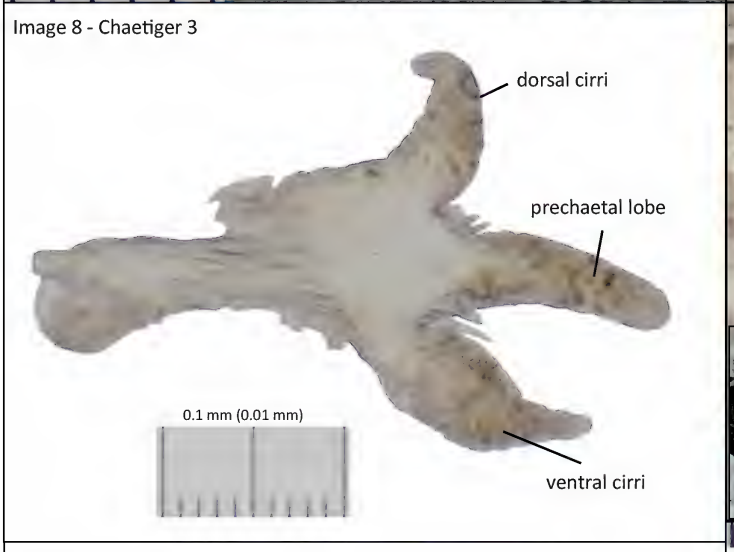
Voucher Sheet

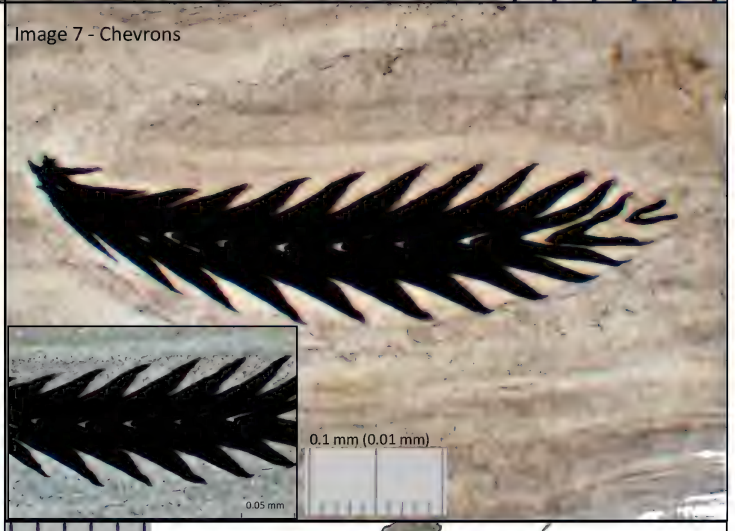
B. Haggin

April, 2023





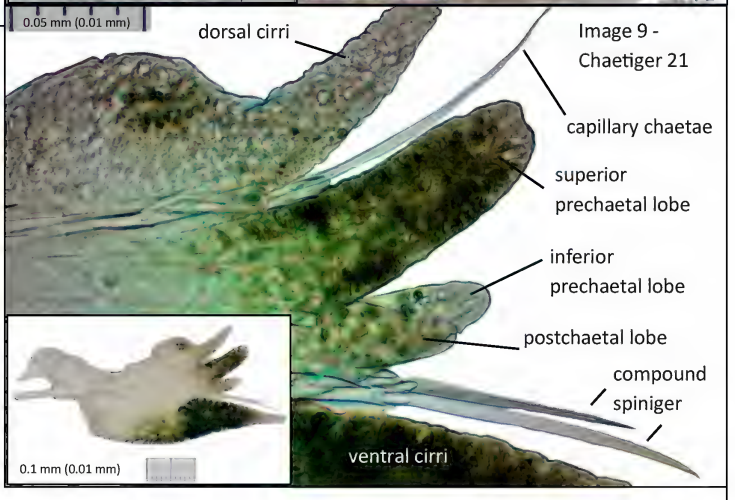




13) Neuropodia of middle chaetigers with inferior fascicle of ~5 long-bladed, compound spinigers with long, fine teeth and a superior fascicle of 2 finely serrated capillary chaetae. 1 acicula present **(Image 9)**.

14) Neuropodia of posterior chaetigers with compound spinigers, ~12 per fascicle, and 1 stout acicula. Capillary chaetae absent **(Image 13)**.

15) Notopodia of posterior chaetigers with 4 stout acicula with slightly bent tips and slightly emergent **(Image 14)**.



Pigmentation:

1) Dorso-lateral pigment patches present above parapodia from chaetiger 9, patches as 2 squares **(Images 1 & 15)**.

2) Faint dorsal pigment band from chaetiger 32, darkening noticeably by chaetiger 72 **(Images 1, 16 & 17)**.

3) Dorso-lateral patches become a single rectangle shortly before the notopodia appears, ~ chaetiger 67, and becomes a single square shortly after the notopodia appears, ~ chaetiger 77 **(Images 16 & 17)**.

4) Faint pigment patch is present ventro-laterally, below the ventral cirri, from ~ chaetiger 44, gradually darkening **(Images 2, 18 & 19)**.

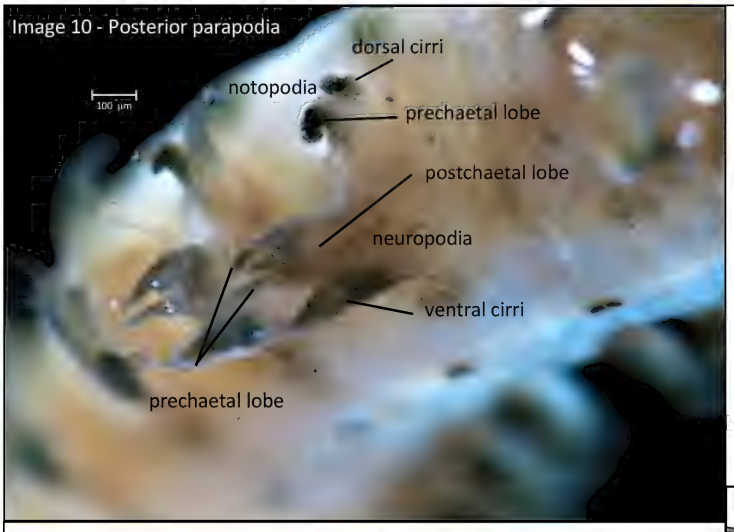
Goniada sp A

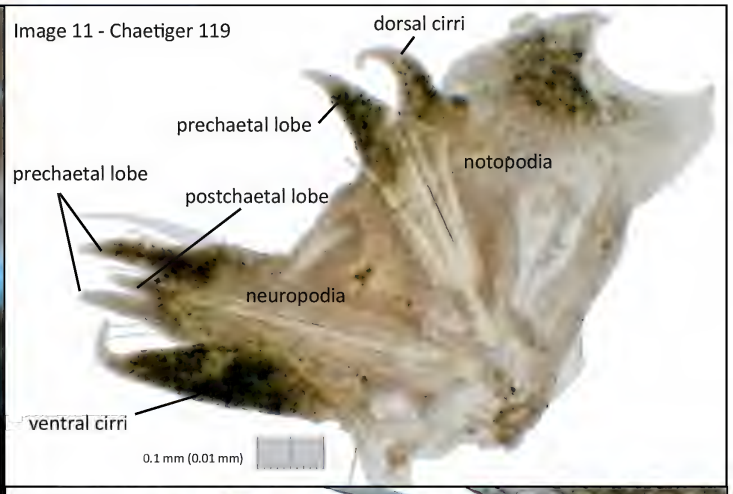
SCAMIT, 2023 §

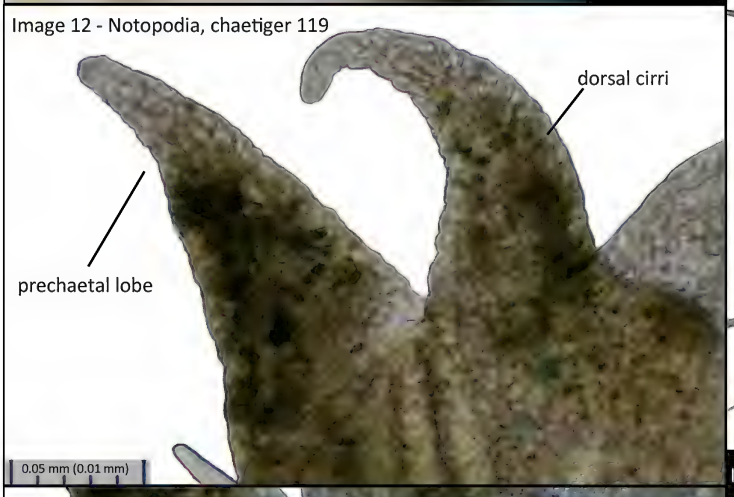
Voucher Sheet

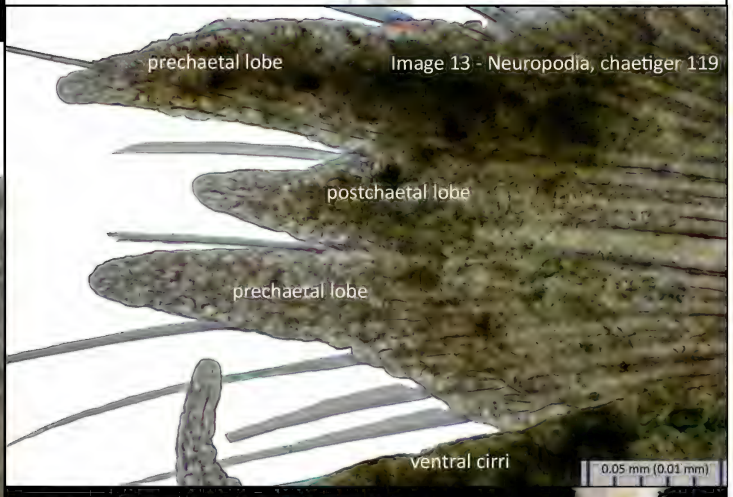
B. Haggin

April, 2023









Pigmentation (cont.):

5) Faint mid-ventral, intersegmental pigment spot is present from chaetiger 65, becoming dark and obvious by chaetiger 72 **(Images 2, 18 & 19)**.

6) Ventral cirri pigmented from chaetiger 9 **(Images 1, 2 & 9)**.

7) Neuropodial prechaetal lobe pigmented from chaetiger 14 **(Images 1, 2 & 9)**.

Goniada sp A

SCAMIT, 2023 §

Voucher Sheet

B. Haggin

April, 2023

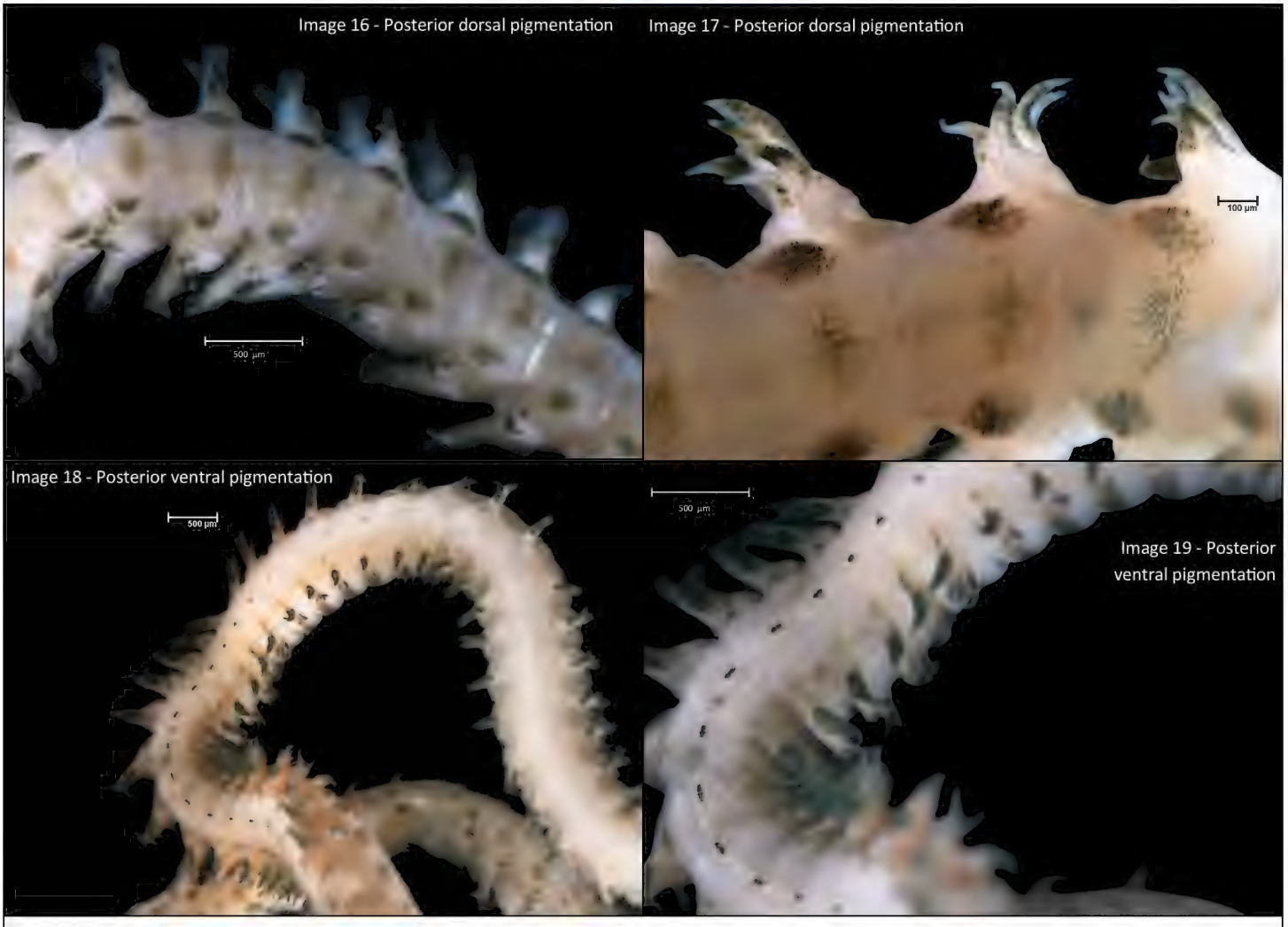


Image 16 - Posterior dorsal pigmentation
500 µm
Image 17 - Posterior dorsal pigmentation
100 µm
Image 18 - Posterior ventral pigmentation
500 µm
500 µm
Image 19 - Posterior ventral pigmentation

All photos by B. Haggin

Pigmentation (cont.):

8) Dorsal cirri pigmented from chaetiger 70 **(Images 10, 11 & 17)**.

9) Notopodia pigmented from chaetiger 72 **(Images 10, 11 & 17)**.

Material Examined:

0720-2D—Pt. Vicente, Palos Verdes, 31m (1 ind., incomplete—137 chaetigers) (33.74120N, 118.42130W—15JUL20) **(all images)**

Similar Species:

Goniada sp A is in a group of local *Goniada* that has 1 prechaetal and 1 postchaetal lobe on chaetiger 5.

Goniada littorea Hartman, 1950—is also in the group of *Goniada* with 1 prechaetal and 1 postchaetal lobe on chaetiger 5. *Goniada littorea* has 15-18 chevrons with irregular edges and proboscideal organs with beaks, while *G.* sp A has 14 chevrons with mostly smooth edges **(Image 7)** and proboscideal organs that lack beaks. *Goniada littorea* is uniramous through 35-43 chaetigers and with a single prechaetal lobe in 9-14 chaetigers while *G.* sp A is uniramous through 71 chaetigers and with a single prechaetal lobe in 7 chaetigers. *Goniada littorea* has capillary chaetae present in only the first 3 chaetigers while *Goniada* sp A has capillary chaetae present to at least chaetiger 21. *Goniada littorea* has 3 dorsal pigment patches across most of the animal while *G.* sp A doesn't get a mid-dorsal pigment patch until chaetiger 32.

Goniada sp A

SCAMIT, 2023 §

Voucher Sheet

B. Haggin

April, 2023

Similar Species (cont.):

Goniada maculata Ørsted, 1843 (*sensu* Hilbig, 1994)—is also in the group of *Goniada* with 1 prechaetal and 1 postchaetal lobe on chaetiger 5, it differs from *G.* sp A by having only 8-10 chevrons rather than 14, having heart-shaped rather than spherical proboscideal organs, and in having a fleshy dorsal cirri rather than one that is asymmetrical and tapering. *Goniada maculata* is uniramous through 23-45 chaetigers and has capillary chaetae present in the notopodia while *Goniada* sp A is uniramous through 72 chaetigers and lacks capillary chaetae in the notopodia.

Goniada acicula Hartman, 1940—*Goniada acicula* is similar to *Goniada* sp A in lacking capillary chaetae in the notopodia but *G. acicula* has 2 prechaetal lobes on chaetiger 5 while *G.* sp A has only 1 prechaetal lobe on chaetiger 5.

Habitat:

Goniada sp A is known from a single individual from off Pt. Vicente, Palos Verdes, CA in shallow water (31m) in sediments of coarse sand. Also collected in the sample were the polychaetes *Protodorvillea gracilis* (Hartman, 1938); *Micropodarke dubia* (Hessle, 1925); *Oxydromus pugettensis* (Johnson, 1901); *Glycera* sp B SCAMIT, 2022 § (reported as *Glycera* sp LA1 Parker, 1999 §); *Opisthodonta* sp SD1 (Rowe, 2004 §); *Odontosyllis phosphorea* Moore, 1909; *Syllis* sp SD1 Rodriquez, 2008 §; *Sphaerosyllis californiensis* Hartman, 1966; *Diopatra splendidissima* Kinberg, 1865; *Mooreonuphis* sp LA1 Brantley, 1999 §; *Lumbrineris latreilli* Audouin & H. Milne Edwards, 1834; *Lumbrineris cruzensis* Hartman, 1944; *Nephtys simoni* Perkins, 1980; *Tenonia priops* (Hartman, 1961); *Arcteobia* sp LA1 Lovell, 2012 §; *Phloe glabra* Hartman, 1961; *Eulalia levicornuta* Cmplx; *Eulalia gracilior* (Chamberlin, 1919); *Clymenella complenata* Hartman, 1969; *Petaloclymene pacifica* Green, 1997; Euclymeninae sp A SCAMIT, 1987 §; *Euchone arenae* Hartman, 1966; *Paradialychone bimaculata* (Banse & Nichols, 1968); *Chaetozone armata* Hartman, 1963; *Pista brevibranchiata* Moore, 1923; *Pista estevanica* Berkeley & Berkeley, 1942; *Pista* sp beta Lovell, 2006 §; *Polycirrus* sp OC1 Phillips & Lovell, 1999 §; *Polycirrus* sp A SCAMIT, 1995 §; *Lanassa venusta venusta* (Malm, 1874); *Lysippe* sp A Williams, 1984 §; *Ampharete manriquei* (Salazar-Vallejo, 1996); *Ampharete labrops* Hartman, 1961; *Phyllochaetopterus prolifica* Potts, 1914; *Semiodera inflata* (Treadwell, 1914); *Dipolydora barbilla* (Blake, 1980); *Malacoceros indicus* (Fauvel, 1928); *Spiophanes norrisi* Meißner & Blank, 2009; *Scoloplos* sp LA2 Haggin, 2017 §; an unidentified Hesionid, an unidentified *Syllis*, an unidentified *Diopatra*, an unidentified *Mooreonuphis*, an unidentified Onuphid, an unidentified *Lumbrineris*, an unidentified Lumbrinerid, an unidentified *Malmgreniella*, an unidentified *Owenia*, an unidentified *Euchone*, an unidentified Sabellid, an unidentified *Pista*, an unidentified *Polycirrus*, an unidentified Terebellid, an unidentified Ampharetid, an unidentified Chaetopterid, an unidentified *Dipolydora*, and an unidentified Scalibregmatid.

Discussion:

Böggemann (2005) gives the generis diagnosis of *Goniada* as follows:

Prostomium annulated, sometimes with only indistinct rings; terminal annulus with biarticulate appendages. Proboscis with a few different types of papillae; usually with macrognaths (except for *Goniada amacrognatha*) and dorsal and ventral micrognaths; chevrons usually present (might be lost in larger specimens of *Goniada gigantea*). Anterior part of body with uniramous parapodia, following region with biramous parapodia, transitional region may be present. Notochaetae capillary or acicular; neurochaetae usually compound spinigers, additional falcigers might be present on anterior few chaetigers of smaller specimens.

In his revision of the Family Goniadidae, Böggemann (2005) either placed local species in synonymy with distant species, or synonymized distant species with local ones. The first example can be seen with *Goniada annulata*, a species described from Alaska, being placed into synonymy with *Goniada foliacea* Moore, 1903 described from Sagami Bay, Japan, and also with *Goniada littorea*, described from southern California, being placed into synonymy with *Goniada echinulata* Grube, 1870 described from Brazil. The second example can be seen with *Goniada clavata* Kirkegaard, 1995, from Indonesia, being placed in synonymy with *Goniada brunnea*, or with multiple species being placed into synonymy with *Goniada maculata*. Most of these synonymies were done with little justification other than the types were examined and created cosmopolitan distributions with depth ranges from the intertidal down to 3859 meters. It is not clear if the species descriptions given in Böggemann (2005) are composites of the multiple species placed in synonymy or if they are redescriptions of the holotypes, but the descriptions given should be used with caution. SCAMIT does not support the synonymies proposed in Böggemann (2005) and continue to use *Goniada annulata* and *Goniada littorea* as valid species in southern California. *Goniada maculata* was original described from Denmark and its actual occurrence locally should be further investigated.

Goniada sp A

SCAMIT, 2023 §

Voucher Sheet
B. Haggin
April, 2023

Discussion (cont.):

The lack of notochaetae in biramous chaetigers is a key feature of identifying *Goniada* sp A but the notopodia does not form until around segment 71. It may not be possible to positively identify *Goniada* sp A with only an anterior fragment. WoRMS currently lists 44 valid species of *Goniada* and SCAMIT Ed. 13 has 5 named species. *Goniada* sp A will be the first provisional *Goniada* when added in Edition 14.

References:

Böggemann, M. 2005. Revision of the Goniadidae. *Abhandlungen des Naturwissenschaftlichen Vereins in Hamburg* (Neue Folgen) 39: 1-354.

Hartman, O. 1940. Polychaetous annelids. Part II. Chrysopetalidae to Goniadidae. *Allan Hancock Pacific Expeditions* 7(3): 173-287.

Hartman, O. 1950. Goniadidae, Glyceridae and Nephtyidae. *Allan Hancock Pacific Expeditions* 15(1): 1-180.

Hilbig, B. 1994. Family Goniadidae Kinberg, 1866. pages 215-230. IN: Blake, James A. & Hilbig, Brigitte. *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. 4 - The Annelida Part 1. Oligochaeta and Polychaeta: Phyllodocida (Phyllodocidae to Paralacydoniidae).* Santa Barbara Museum of Natural History. Santa Barbara.

Read, G. & Fauchald, K. (Ed.) 2023. World Polychaeta Database. *Goniada* Audouin & H Milne Edwards, 1833. Accessed through: World Register of Marine Species at: https://www.marinespecies.org/aphia.php?p=taxdetails&id=129300 on 2023-04-12

SCAMIT. 2021. *A Taxonomic Listing of Benthic Marco- and Megainvertebrates from Infaunal & Epifaunal Monitoring and Research Programs in the Southern California Bight, Edition 13*. Cadien, D. B., Lovell, L. L., Barwick, K. L., Haggin, B. M., eds. 203pp.

Other Literature Consulted:

Böggemann, M. 2016. Glyceriformia (Annelida) of the abyssal SW Atlantic and additional material from the SE Atlantic. *Marine Biodiversity* 46(1): 227-241.

Böggemann, M. & Dietz, A. 2016. Glyceriformia (Annelida) from the deep sea of the Atlantic sector of the Southern Ocean. *Polar Biology* 39(8): 1505-1510.

Hartman, O. 1968. *Atlas of the Errantiate Polychaetous Annelids from California*. Los Angeles, CA, University of California, Allan Hancock Foundation.

Moore, J. P. 1905. New species of Polychaeta from the North Pacific, chiefly from Alaskan waters. *Proceedings of the Academy of Natural Sciences of Philadelphia* 57: 525-554, plates XXXIV-XXXVI.

Treadwell, A. L. 1906. Polychaetous annelids of the Hawaiian Islands collected by the steamer Albatross in 1902. *Bulletin of the United States Fish Commission* 23(3): 1145-1181.

Version History:

Version 1.0—Voucher sheet created (28OCT2021)

Version 1.1—Updated photo labelling to reduce image clutter; Improved species description; Updated material examined section (12APR2022)

Version 2.0—Updated voucher to new SCAMIT guidelines; Updated name to *Goniada* sp A and author to SCAMIT, 2023 §; Updated Habitat section and added co-occurring species; Added Discussion and Other Literature Consulted sections; Update References; Added ITI group (12APR2023)

SCAMIT Newsletter
Vol. 40 no. 5 & 6

Voucher Sheet

B. Haggin
April, 2023

Species: *Jasmineira* sp C SCAMIT, 2023 §
Synonyms: *Jasmineira* sp LA1 Haggin, 2019 §

P-code—119
ITI-code—Group 1

Subfamily: Sabellinae
Family: Sabellidae
Order: Sabellida
Infraclass: Canalipalpata
Subclass: Sedentaria
Class: Polychaeta
Phylum: Annelida

Diagnostic Characters:

43 chaetigers; 15.4 mm long x 1.2 mm wide (excluding chaetae & radiole base)

1) Thorax with 8 chaetigers. Abdomen with 35 chaetigers **(Image 1)**.
2) Branchial skeleton retained, Branchial crown with semicircular lobes. 12 pairs of radioles (crown absent, # radioles determined by counting attachment scars) **(Images 1 & 2)**.
3) Collar complete, smooth, w/ slight ventral notch (only divided @ faecal groove), lowest dorsally, highest ventrally (close to even, only slight change in size). Collar length about same length of chaetiger 1 **(Images 1 & 2)**.
4) 2 pairs of Otocysts; dorsal pair kidney-shaped & very inflated, ventral pair circular & only slightly inflated (vascular coils?) **(Image 2)**.
5) Narrow glandular girdle on chaetiger 2; ventrally even with chaetae of chaetiger 2, dipping below chaetae laterally and remaining low dorsally **(Image 2)**.
6) Pygidium with digitate caudal appendage **(Images 3 & 4)**.
7) Thoracic notochaetae of 2 types: Superior notochaetae unilimbate (or asymmetrically bilimbate), ~5 per fascicle; Inferior notochaetae spatulate with mucron tip, ~ 7 per fascicle **(Image 5)**.
8) Thoracic neurochaetae acicular, long-handled, slightly bent with multiple rows of many fine teeth above main tooth, ~ 10 per fascicle **(Image 6)**.
9) Abdominal notochaetae capillary (or limbate with very narrow wings), ~ 10 per fascicle **(Image 7)**.
10) Abdominal neurochaetae avicular, S-shaped, but with longish handle between bends, with multiple rows of fine teeth above main tooth, ~ 15 per fascicle **(Image 8)**.

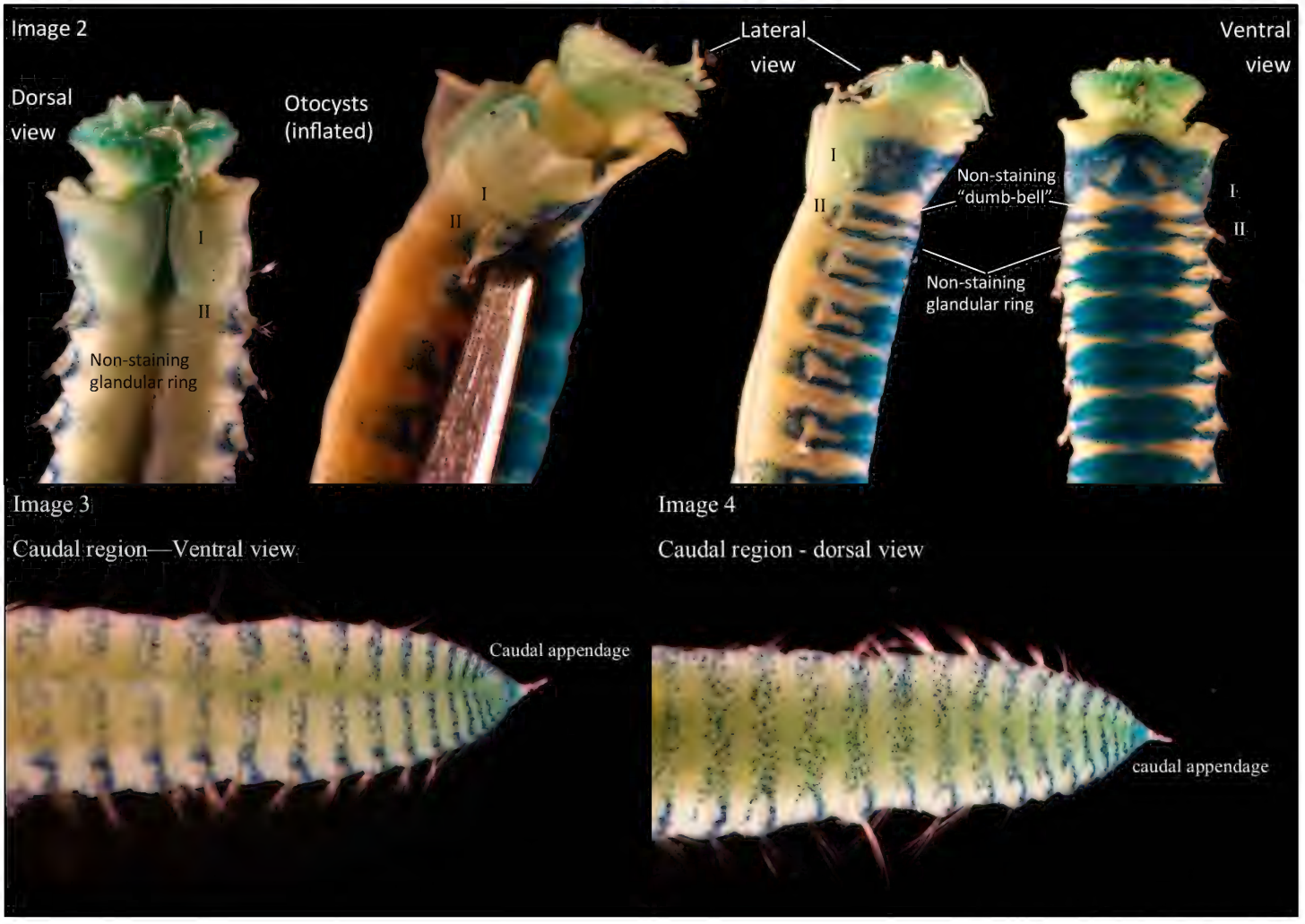
Jasmineira sp C

SCAMIT, 2023 §

Voucher Sheet

B. Haggin

April, 2023



Images 1, 2, 3, 4 & 10 by N. Lee
Images 5-9 by B. Haggin

Pigmentation/MGS:

1) Collar—unstained along anterior 1/2 & dorsally, slight stain on inside of collar along dorsal gap. Collar stained laterally, not extending beyond setae and ventrally **(Images 1 & 2)**.
2) Chaetiger 1—unstained dorsally, stained laterally (ventral to chaetae) & ventrally. Pair of unstained diagonal patches vento-medially in anterior, followed by a stain band and a large, unstained "dumb-bell" patch posteriorly across ventrum **(Images 1 & 2)**.
3) Chaetiger 2—with a solid "Figure 8" stain ventrally with a lateral extension from each lobe of the "8" extending to & connecting just dorsal of the chaetal fascicle **(Images 1 & 2)**.
4) Chaetigers 3-8—with an "oval" stain patch ventrally, stain patch with 2 lateral extensions extending to and connecting dorsal of the chaetal fascicle. Dorsal stain approaching midline in posterior thorax **(Images 1 & 2)**.
5) Abdominal chaetigers—with a rectangular stain patch encircling each chaetiger. Stain intensity decreasing posteriorly, but continues to pygidium **(Images 3 & 4)**.

Jasmineira sp C

SCAMIT, 2023 §

Voucher Sheet

B. Haggin

April, 2023

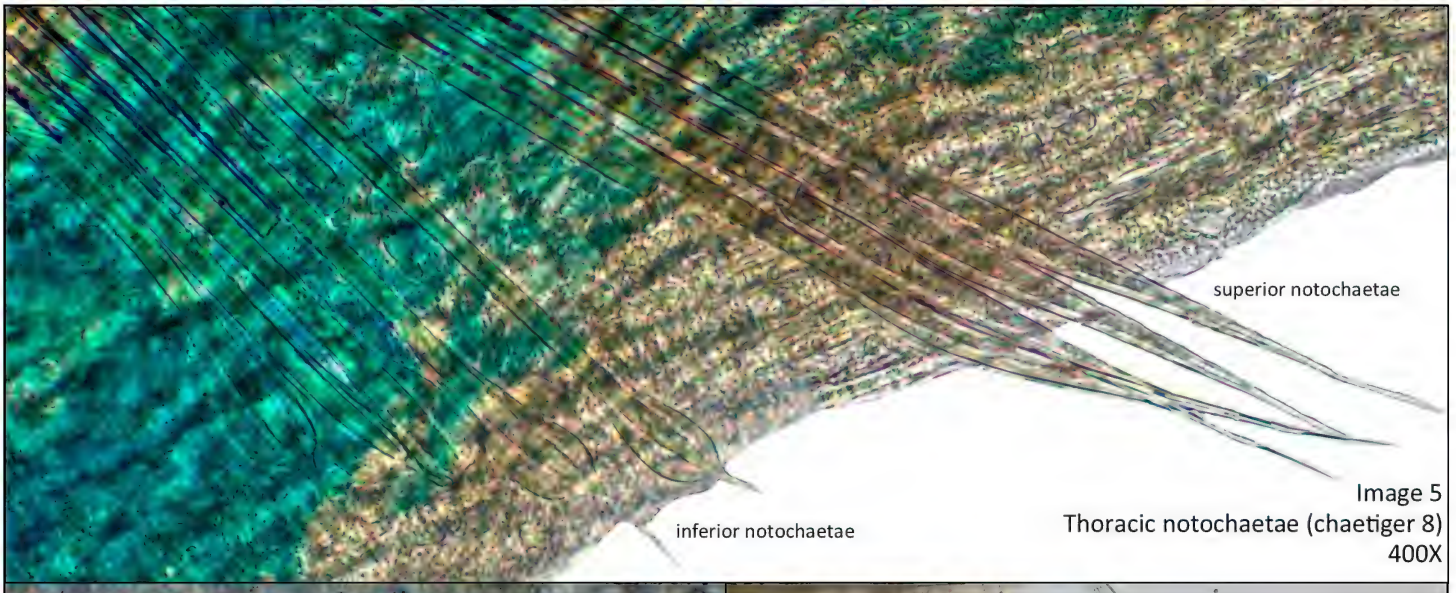


Image 5
Thoracic notochaetae (chaetiger 8)
400X

Image 6
Thoracic neurochaetae 600X

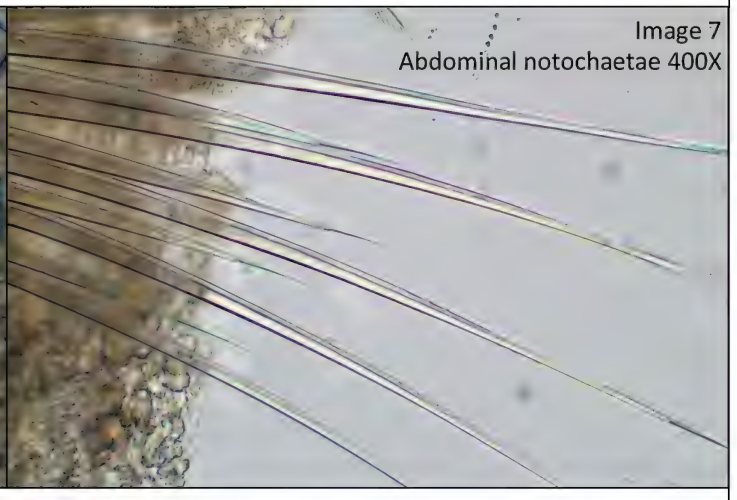


Image 7
Abdominal notochaetae 400X

Material Examined:

B'18-10365—Off west coast of Santa Catalina Island, San Pedro Channel, 548 m (2 inds.) (33.53667N, 118.58933W) **(Images 1-9)**

Similar Species:

Jasmineira sp B SCAMIT, 1986 §—*Jasmineira* sp B is similar to *Jasmineira* sp C in having a caudal appendage and retaining a branchial skeleton. The two differ in *Jasmineira* sp B has 1 pair of otocysts **(Image 10)** while *Jasmineira* sp C has 2 pair of otocysts. *Jasmineira* sp B also has 3 types of thoracic notochaetae (bilimbate, subspatulate & spatulate with a short mucron) while *Jasmineira* sp C has only 2 types of thoracic notochaetae (narrowly bilimbate & spatulate with a mucron tip). The stain pattern also differs between the two species. *Jasmineira* sp B lacks the unstained "dumb-bell" patch in chaetiger 1 that is present in *Jasmineira* sp C and the thoracic stain patches of *Jasmineira* sp B are more rectangular and extend to the chaetal fascicle **(Image 10)** while the ventral stain patches of *Jasmineira* sp C is more oval and has a slight pinching prior to the chaetal fascicle **(Image 2)**.

Jasmineira sp C

SCAMIT, 2023 §

Voucher Sheet

B. Haggin

April, 2023

Image 8
Abdominal neurochaetae 400X

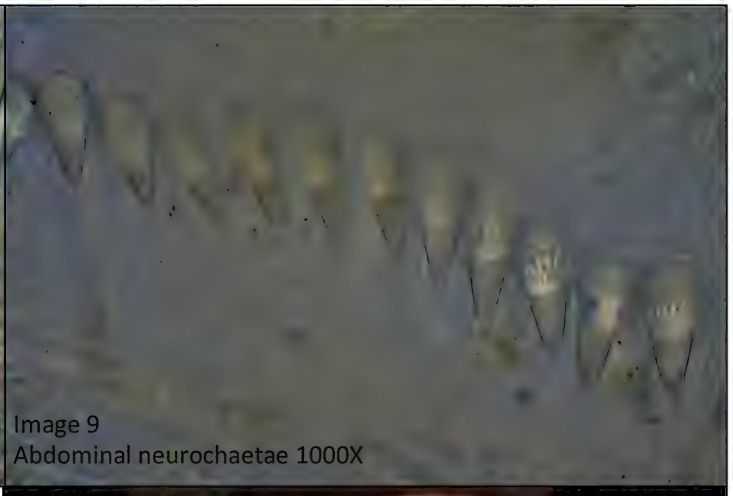


Image 9
Abdominal neurochaetae 1000X

Habitat:

Jasmineira sp C is known from deeper water in the San Pedro Channel. It is found in sediments of clayey silt from 548 m. Also collected in the sample were the polychaetes *Maldane californiensis* Green, 1991; Euclymeninae sp A SCAMIT, 1987 §; *Aricidea* (*Acmira*) *rubra* Hartman, 1963; *Cirrophorus branchiatus* Ehlers, 1908; *Subadyte mexicana* Fauchald, 1972; *Prionospio ehlersi* Fauvel, 1928; *Trichobranchus hancocki* (Hartman, 1955); *Leiochrides hemipodus* (Hartman, 1960); *Aphelochaeta* sp LA4 Haggin, 2019 §; *Aphelochaeta* sp LA5 Haggin, 2019 §; Glycinde armigera Moore, 1911; an unidentified Ampharetid, an unidentified Polynoid, an unidentified Sabellid, an unidentified *Levinsenia*, and an Oligochaete.

Discussion:

Cochrane (2000) gave the generic diagnosis of *Jasmineira* as follows:

Small to medium-sized sabellins with few to numerous pairs of radioles; radiolar skeleton with two rows of cells. Interradiolar membrane absent; radiolar flanges present. Dorsal lips with dorsal radiolar appendages; dorsal pinnular appendages absent. Ventral lips and parallel lamellae present. Few to many pairs of ventral cirri *(sensu* Krøyer) present. Anterior margin of anterior peristomial ring (hereafter referred to as the peristomium) with narrow, ventral lobe; posterior peristomial ring collar (hereafter named the collar) present. Glandular ridge on chaetiger 2. Chaetiger 1 bearing only elongate narrowly swollen chaetae with a long terminal taper, geniculate at the 'knee' area (often referred to as limbate capillary chaetae, see also Chapter 1.2.5). From chaetiger 2, inferior thoracic notochaetae present in two transverse rows or groups: anterior row(s) of shorter chaetae (also referred to in the literature as limbate capillary chaetae and in need of clarification), posterior row(s) with spatulate or chaetae with broad bilateral swellings. Abdominal fascicles arranged in two transverse rows: anterior row in anterior segments with elongate narrowly swollen chaetae, geniculate at the 'knee' area (often referred to as "limbate capillaries"); posterior row in anterior chaetigers with fine needle-like chaetae (often referred to as "needle-like capillaries"); anterior and posterior rows in posterior chaetigers containing only the latter chaetal type. Thoracic uncini acicular; teeth above main fang of equal size; hood present. Abdominal uncini with main fang surmounted by series of equal-sized teeth; breast reduced to narrow swelling; handles long. Abdominal chaetigers

Jasmineira sp C

SCAMIT, 2023 §

Voucher Sheet
B. Haggin
April, 2023

Discussion (cont.):

number several to many, depending on the taxon and/or size of the individuals.

WoRMS currently lists 18 valid species of *Jasmineira*. None of the described species are from southern California. The closest described species are from Japan, *Jasmineira kikuchii* Nishi *et al.*, 2009 and *Jasmineira pacifica* Annenkova, 1937. SCAMIT Ed. 13 has only 1 provisional species listed.

References:

Capa, M., Giangrande, A., Nogueira, J. M. de M. & Tovar-Hernández, M. A. 2014. Annelida:Polychaetes - Sabellidae Latreille, 1825. IN: Westheide, W. & Purschke, G. (Eds.), *Handbook of Zoology - A Natural History of the Phyla of the Animal Kingdom* 1-22.

Cochrane, S. J. 2000. Taxonomy and Systematics of Selected Marine Soft-Bottom Fan-Worms (Polychaeta: Sabellidae: Sabellinae). *Ph.D. Thesis, University of St. Andews, Scotland, U.K.*, 296 pp.

Fauchald, K. 1977. The polychaete worms, definitions and keys to the orders, families and genera. *Natural History Museum of Los Angeles County: Los Angeles, CA (USA), Science Series.* 28:1-188.

Harris, L. H. 1986. *Jasmineira* sp B Voucher Sheet. *SCAMIT Newsletter* 5(6): 8-10.

Read, G. & Fauchald, K. (Ed.) 2023. World Polychaeta Database. *Jasmineira* Langerhans, 1880. Accessed through: World Register of Marine Species at: https://www.marinespecies.org/aphia.php?p=taxdetails&id=129533 on 2023-04-13

SCAMIT. 2021. *A Taxonomic Listing of Benthic Marco- and Megainvertebrates from Infaunal & Epifaunal Monitoring and Research Programs in the Southern California Bight, Edition 13*. Cadien, D. B., Lovell, L. L., Barwick, K. L., Haggin, B. M., eds. 203pp.

Other Literature Consulted:

Fitzhugh, K. 1989. A systematic revision of the Sabellidae-Caobangiidae-Sabellongidae complex (Annelida: Polychaeta). *Bulletin of the American Museum of Natural History* 192: 1–104.

Version History:

Version 1.0—Draft voucher sheet created (31MAy2019)

Version 2.0—Updated name to *Jasmineira* sp C and author to SCAMIT, 2023 §; Added specimen dimensions; Updated voucher sheet to conform to new SCAMIT guidelines; Updated image text to reduce image clutter; Added ITI– and P-codes; Added Habitat, Discussion and Other Literature Consulted section; Added new images of thoracic and abdominal chaetae; Added comparison images of *Jasmineira* sp B stain pattern (13APR2023)

SCAMIT Newsletter
Vol. 40 no. 5 & 6

Voucher Sheet

B. Haggin
April, 2023

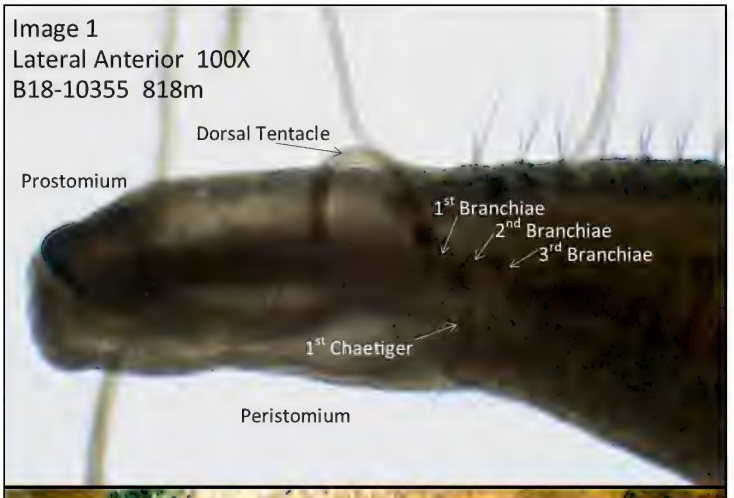
Species: *Kirkegaardia* sp B SCAMIT, 2023 §
Synonyms: *Kirkegaardia* sp LA1 Haggin, 2019 §

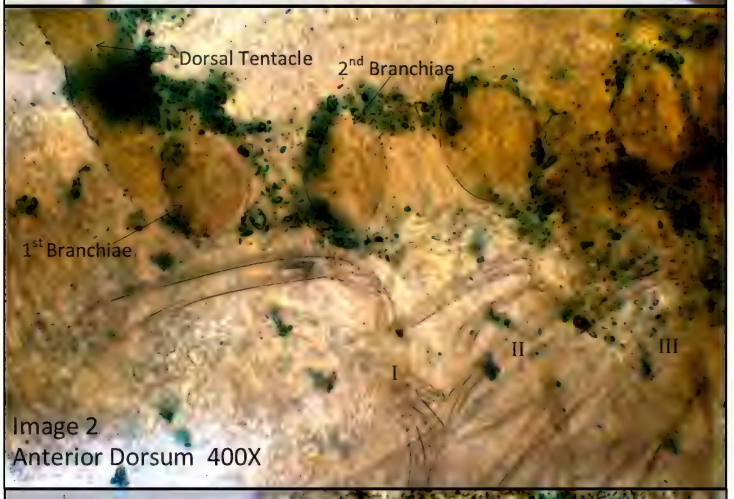
P-Code—P059
ITI—Group 2

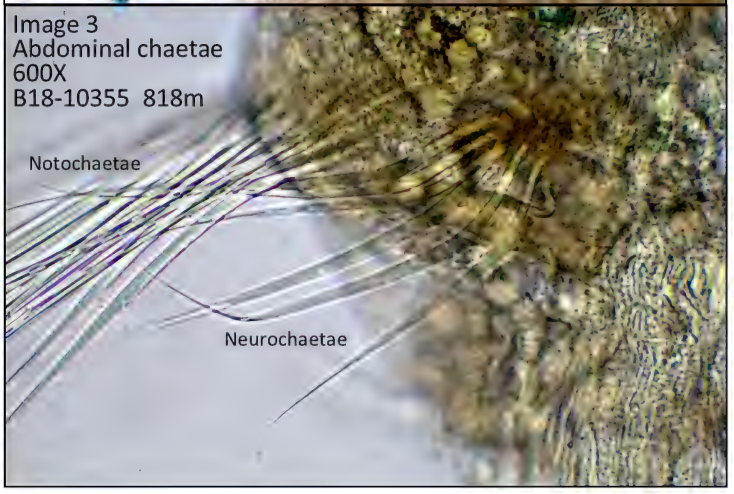
Family: Cirratulidae
Suborder: Cirratuliformia
Order: Terebellida
Infraclass: Canalipalpata
Subclass: Sedentaria
Class: Polychaeta
Phylum: Annelida

Diagnostic Characters:

1) Prostomium & peristomium elongate **(Images 1 & 4-9)**.
2) Body long & thin (thread-like) **(Image 10)**.
3) Subdermal eyes present (becomes more apparent when stained).
4) Dorsal tentacle & 1st branchiae inserted anterior to 1st chaetiger. Dorsal tentacle inserted more medially than 1st branchiae **(Images 1 & 2)**.
5) Thorax slightly dorso-ventrally compressed but laterally inflated. Chaetigers crowded, much wider than long. Parapodia are slightly dorsally elevated, forming a slight dorsal groove **(Images 1 & 4-7)**.
6) Thorax with 22-24 chaetigers **(Images 8 & 10)**.
7) Abdominal chaetigers round in cross-section, longer than wide & slightly moniliform **(Image 10)**.
8) Abdominal notochaetae smooth, becoming very long in mid-posterior abdomen **(Image 3)**.
9) Abdominal neurochaetae tapering to fine tips, basal edge finely denticulated and flattened. Denticulations not apparent until mid-abdomen @ 600X magnification or more **(Image 3)**.
10) Pygidium unknown.







All photos by B. Haggin

Pigmentation/MGS:

1) Prostomium staining on anterior margin **(Images 4, 5, 6 & 7)**.
2) Peristomium staining dorsally, speckled, not in annulation furrows. Ventrally as a band behind mouth, then as a "V"-shape extending to anterior of chaetiger 1, beginning slightly laterally. Peristomium unstained postero-laterally **(Images 4-10)**.

Kirkegaardia sp B

SCAMIT, 2023 §

Voucher Sheet

B. Haggin

April, 2023

Image 4
Dorsal Anterior Stain
40X

Image 5
Dorsal Anterior Stain
80X

Image 6
Lateral Anterior Stain
40X

Image 7
Lateral Anterior Stain 80X

Pigmentation/MGS (cont.):

3) Ventral Thorax w/ dark segmental bands from chaetiger 11-22, extending laterally to above notochaetae. Anterior thorax lightly speckled **(Images 4, 6 & 8)**.

4) Abdomen with a lateral stain spot posterior to the chaetal fascicles. Ventrally with a medial line in each segment **(Images 8 & 10)**.

Image 8
Ventral Anterior Stain 63X

Material Examined:

B'18-10355—South of Pt. Dume, Santa Monica Basin/San Pedro Channel, 818m (2 inds.) (33.88369N, 118.79006W—17AUG18) **(all images)**

B'18-10357—Santa Monica Basin, 839m (6 inds.) (33.85231N, 119.1947W—20JUL18)

B'18-10362—San Pedro Channel, 745m (4 inds.) (33.63469N, 118.58346W—02AUG18)

B'18-10363—San Pedro Channel, 738m (3 inds.) (33.61354N, 118.72009W—02AUG18)

B'18-10366—Off Two Harbors, Santa Catalina Island, San Pedro Channel, 883m (1 ind.) (33.42346N, 118.42346W—02AUG18)

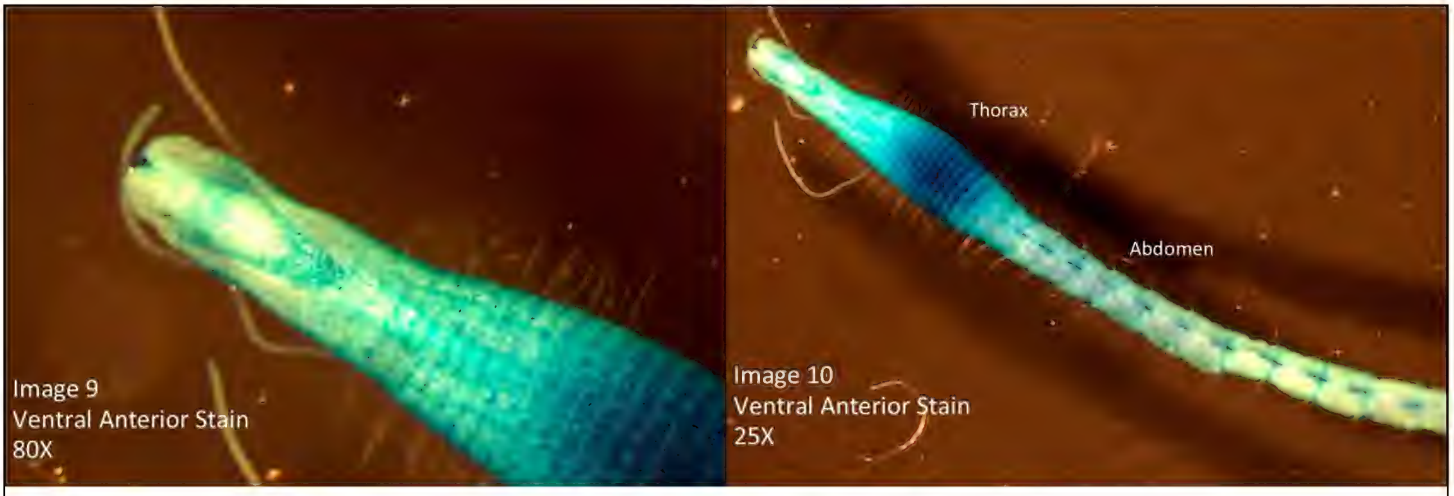
Kirkegaardia sp B

SCAMIT, 2023 §

Voucher Sheet

B. Haggin

April, 2023



Similar Species:

Kirkegaardia cryptica (Blake, 1996) - *Kirkegaardia cryptica* & *Kirkegaardia* sp B have a very similar overall appearance. They are both long and thin (thread-like), have an elongate peristomium, the dorsal tentacle and 1st branchiae are inserted anterior to chaetiger 1 and the thoracic parapodia are slightly dorsally elevated, forming a slight dorsal groove. The differ in the denticulation of the abdominal neurochaetae where *Kirkegaardia cryptica* has a distinct sawtooth edge with individual teeth widely spaced along the cutting edge and *Kirkegaardia* sp B has a more finely denticulated cutting edge. The MGS pattern of *Kirkegaardia cryptica* and *Kirkegaardia* sp B also differ. The ventral thoracic stain of *Kirkegaardia cryptica* is a solid stain patch in the posterior thorax where in *Kirkegaardia* sp B, the posterior ventral thoracic stain occurs in distinct bands. The ventral peristomium has a distinct "V"-shaped stain in *K.* sp B that is absent in *Kirkegaardia cryptica*.

Kirkegaardia sp SD9 (Rodriguez-Villanueva, 2008 §) - *Kirkegaardia* sp SD9 & *Kirkegaardia* sp B have a very similar appearance as they both have an elongate peristomium and a long and thin (thread-like) body. *Kirkegaardia* sp SD9 differs in the more elongate (chaetigers are widely spaced) thorax compared to the more compressed (chaetigers are tightly packed) thorax of *Kirkegaardia* sp B. The MGS pattern of *Kirkegaardia* sp SD9 is more spread out in the ventral thorax, with the posterior thoracic ventral bands being broken, giving the appearance of 3 lines running down the ventrum. The ventral posterior thoracic stain pattern of *Kirkegaardia* sp B is not a series of broken bands.

Habitat:

Kirkegaardia sp B is known from multiple individuals collected during Bight '18. It was collected between 738-883 m in the Santa Monica Basin/San Pedro Channel between Pt. Dume and Two Harbors, Santa Catalina Island in clayey silt. Also collected in the samples were the polychaetes *Protis pacifica* Moore, 1923 (10355, 10362, 10366); *Amage longibranchiata* Hartman, 1960 (10355, 10366); *Ampharete cornuta* (Hilbig, 2000) (10355); *Phyllochaetopterus* sp A SCAMIT, 2023 § (reported as *Phyllochaetopterus* sp LA1 Haggin, 2019 §) (10355, 10362, 10366); *Leiochrides hemipodus* Hartman, 1960 (10363); *Chaetozone* sp D SCAMIT, 2023 § (reported as *Chaetozone* sp LA2 Haggin, 2019 §) (10355); *Myriochele gracilis* Hartman, 1955 (10362); *Aricidea* (*Acmira*) *rubra* Hartman, 1963 (10362, 10363); *Aricidea* (*Acmira*) sp LA1 Lovell, 2014 § (10355, 10366); *Aricidea* (*Strelzovia*) *monicae* Laubier, 1967 (10363); *Levinsenia oculata* (Hartman, 1957) (10362, 10363); *Cossura rostrata* Fauchald, 1972 (10362); *Maldane californiensis* Green, 1991 (10362, 10363); *Spiophanes fimbriata* Moore, 1923 (10363); *Harmothoe* sp LA1 Furlong, 2014 § (10362); *Lepidonotus* sp A SCAMIT, 2023 § (reported as *Lepidonotus* sp LA1 Haggin, 2019 §) (10362); *Syllis* sp A SCAMIT, 2023 § (reported as *Syllis* sp LA4 Haggin, 2019 §) (10362); an unidentified *Aricidea* (10355), an unidentified *Cossura* (10362),

Kirkegaardia sp B

SCAMIT, 2023 §

Voucher Sheet
B. Haggin
April, 2023

Habitat (cont.):

an unidentified Syllid (10362), an unidentified Polynoid (10362), an unidentified Eyclymeninid (10363), and an unidentified Hesionid (10355). *Kirkegaardia* sp B was the only polychaete found in sample B'18-10357.

Discussion:

Blake (2016) replaced the genus *Monticellina* with the genus *Kirkegaardia* after discovering that *Monticellina* was preoccupied in the Platyhelminthes and redescribed the genus as: "Bitentaculate cirratulids with distinct body regions and all setae distally pointed. Pre-setigerous area typically elongate, cylindrical, with short, blunt prostomium and long peristomium with none to many weakly developed annulations; dorsal tentacles arising on posterior margin of peristomium, anterior to setiger 1. Thoracic notopodia often shifted dorsally, elevated, producing distinct dorsal groove along thoracic region; other species with thoracic parapodia more lateral, leaving broad elevated dorsum; parapodia of middle and posterior region lateral. Middle body segments longer than wide, frequently beadlike; posterior segments wider than long, somewhat crowded, with posterior most segments usually expanded or enlarged. Setae including simple capillaries with fibrils observed under SEM and denticulated capillaries with distinct denticles present along one edge of seta; denticles visible at 400-1000X; blades usually basally expanded."

Blake (2016) divided *Kirkegaardia* into three species groups: *Kirkegaardia dorsobranchialis-heterochaeta* group, *Kirkegaardia baptisteae-tesselata* group, and *Kirkegaardia luticastella* group. The *Kirkegaardia luticastella* group is characterized by an enlarged pre-chaetigerous region and anterior thorax and occupy distinct mud balls on the seafloor. The *Kirkegaardia baptisteae-tesselata* group is characterized by thoracic parapodia not elevated and without an elongated pre-chaetigerous region. The *Kirkegaardia dorsobranchialis-heterochaeta* group is characterized by elevated thoracic parapodia producing a dorsal channel and an elongated pre-chaetigerous region that is either smooth or with annular rings or a dorsal ridge. *Kirkegaardia* sp B would fall into the *Kirkegaardia dorsobranchialis-heterochaeta* group which also contains another local species, *Kirkegaardia cryptica*.

WoRMS currently lists 42 valid species of Kirkegaardia and SCAMIT Ed. 13 has 5 named species and 1 provisional species. SCAMIT also recognizes 1 additional in-house provisional species from City of San Diego that is not currently on the SCAMIT species list.

References:

Blake, J. A. 1996. Family Cirratulidae Ryckholdt, 1851. Pages 263-384. IN: Blake, James A.; Hilbig, Brigitte; and Scott, Paul H. *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 6- The Annelida Part 3. Polychaeta: Orbiniidae to Cossuridae*. Santa Barbara Museum of Natural History. Santa Barbara.

Blake, J. A. 2016. *Kirkegaardia* (Polychaeta, Cirratulidae), new name for *Monticellina* Laubier, preoccupied in the Rhabdocoela, together with new records and descriptions of eight previously known and sixteen new species from the Atlantic, Pacific, and Southern Oceans. *Zootaxa* 4166(1): 1-93.

Read, G. & Fauchald, K. (Ed.) 2023. World Polychaeta Database. *Kirkegaardia* Blake, 2016. Accessed through: World Register of Marine Species at: https://www.marinespecies.org/aphia.php?p=taxdetails&id=884676 on 2023-04-12

Rodriquez-Villaneuva, V. 2017. Cirratulidae Ryckholdt, 1851. *SCAMIT Powerpoint Presentation* (June 2017).

Kirkegaardia sp B

SCAMIT, 2023 §

Voucher Sheet
B. Haggin
April, 2023

References (cont.):

SCAMIT. 2021. *A Taxonomic Listing of Benthic Marco- and Megainvertebrates from Infaunal & Epifaunal Monitoring and Research Programs in the Southern California Bight, Edition 13*. Cadien, D. B., Lovell, L. L., Barwick, K. L., Haggin, B. M., eds. 203pp.

Other Literature Consulted:

Blake, J. A. 2019. New species of Cirratulidae (Annelida, Polychaeta) from abyssal depths of the Clarion-Clipperton Fracture Zone, North Equatorial Pacific Ocean. *Zootaxa* 4629(2): 151-187.

Dean, H. K. & Blake, J. A. 2009. *Monticellina* (Polychaeta: Cirratulidae) from the Pacific coast of Costa Rica with descriptions of six new species. *Zoosymposia* 2: 105-126.

Elias, R., Rivero, M. S. & Lobo Orensanz, J. M. 2016. New species of *Monticellina* and *Chaetozone* (Polychaeta: Cirratulidae) in the SW Atlantic, and a review of Monticellina species. *Journal of the Marine Biological Association of the United Kingdom* 97(7): 1553-1563.

Hartman, O. 1969. *Atlas of the Sedentariate Polychaetous Annelids from California*. Los Angeles, Ca, University of California, Allan Hancock Foundation.

Version History:

Version 1.0—Voucher sheet created (02JUL2019)

Version 2.0—Updated voucher sheet to new SCAMIT guidelines; Updated name to *Kirkegaardia* sp B and author to SCAMIT, 2023 §; Added Discussion, Habitat and Other Literature Consulted sections; Added ITI & P-Code (12APR2023)

SYNONOMY: *Phoronis* sp DC1 Pasko 2019

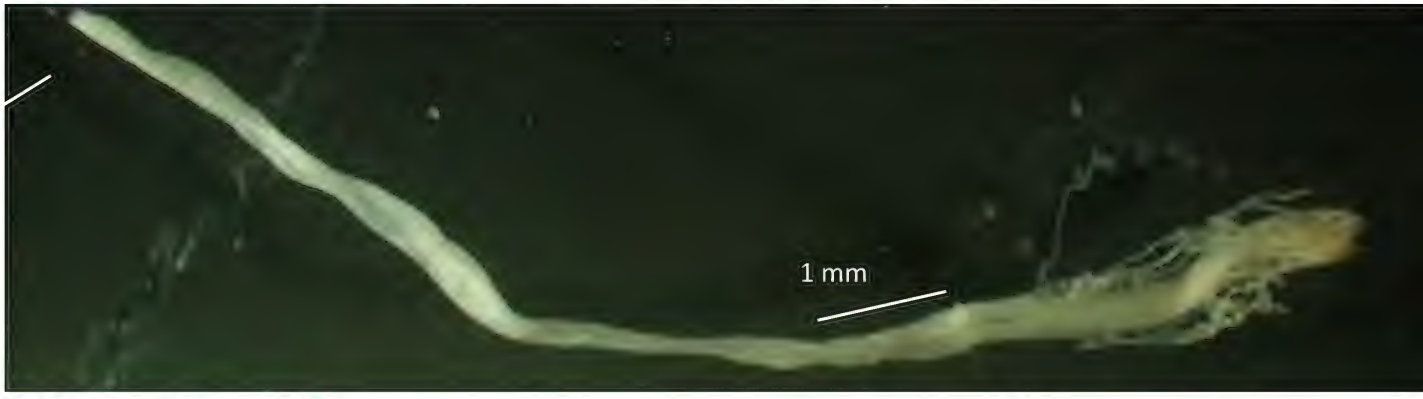
COLLECTIONS:
OCSD Bight'18 Station 10369, 568m, 23-July-2018.

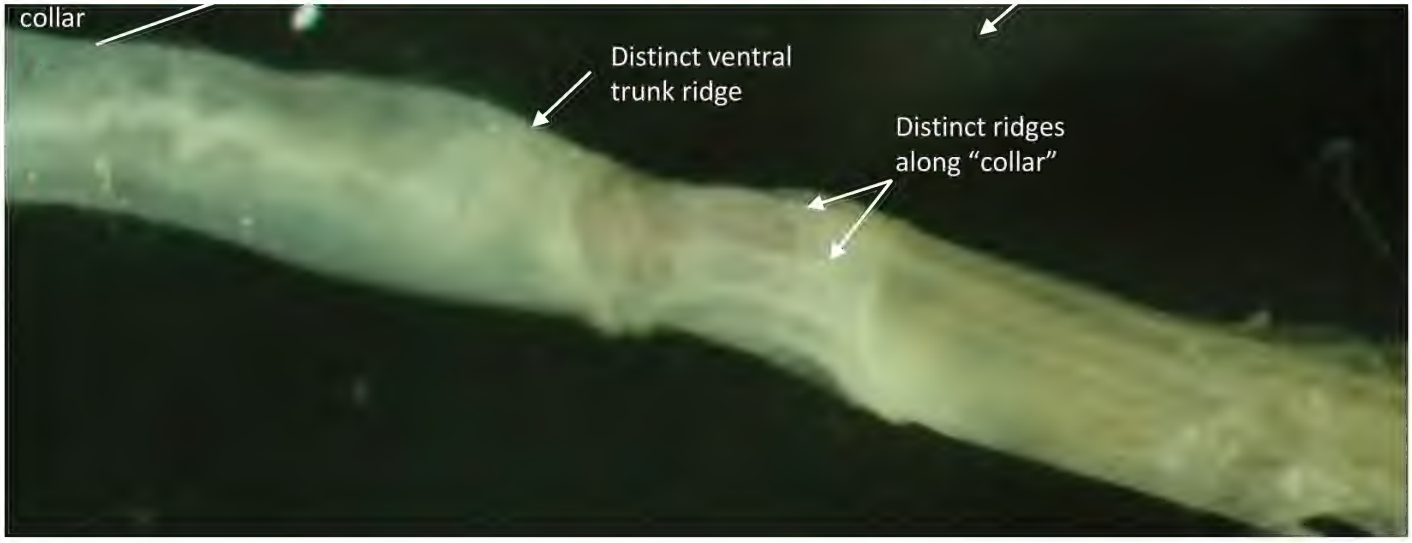
LITERATURE:

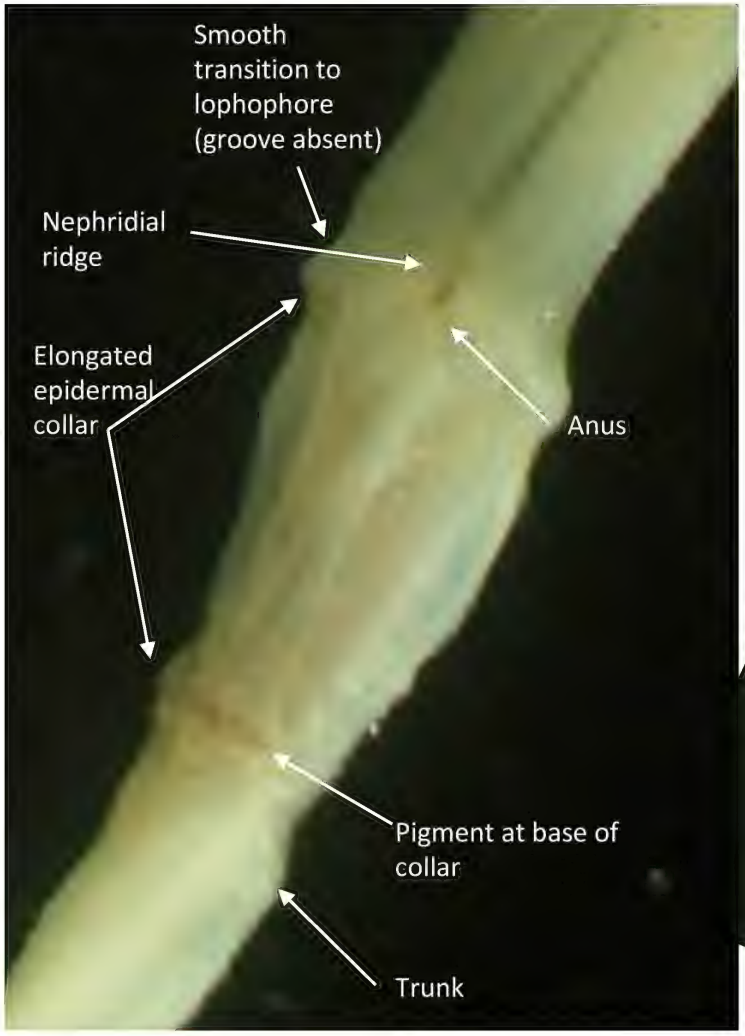
DIAGNOSTIC CHARACTERS (See photos front and back)

- Deep water species
- Trunk with at least one distinctive ventral ridge; collar with multiple ridges
- Lophophore tentacles elongate, thin (not enumerated)
- Elongated epidermal collar present between lophophore and anterior portion of trunk; collar bearing multiple distinctive ridges; base indicated by small group of pigment spots
- Transition from lophophore to collar smooth, indicated by low ridge, transitional groove absent
- Muscle pattern seemingly unique, with each band being notably thickened, some at least seem to be of the "feathery type" (see below)
- At least one giant lateral nerve fiber observed
- Tube unknown

Comments:
It can be distinguished from other phoronids by distinctive ridge along trunk, elongate epidermal collar also bearing crests or ridges, and seemingly distinctive muscle arrangement.







Phoroindae sp DC1. Cross-section, mid-body

SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS

March-April 2022 SCAMIT Newsletter Vol. 40 No. 6

Sheet by W. Enright CSD

This Issue

14 MARCH 2022, AMPELISCIDAE & PHOXOCEPHALIDAE, LEADS A. DAVENPORT & D. PASKO, ZOOM 2
4 APRIL 2022 SLRC PROVISIONAL SPECIES, ZOOM 15
11 APRIL 2022, BIVALVIA PART III, TONY PHILLIPS, ZOOM 17
LITERATURE CITED 21
SCAMIT OFFICERS 22

The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes

Publication Date: July 2023

14 MARCH 2022, AMPELISCIDAE & PHOXOCEPHALIDAE, LEADS A. DAVENPORT & D. PASKO, ZOOM

Attendance: Brent Haggin, Don Cadien, Jojo Loan, Chase McDonald, LACSD; Ben Ferraro, OCSD; Andrew Davenport, Katie Beauchamp, Lauren Valentino, CSD; Dean Pasko, DCE; Heather Peterson, Jessica Donald, CCSF; Angelica Zavala Lopez, MTS; Dany Burgess, WADOE; Siena Audra McKim, UCSB – Tom Turner Lab; Ashley Smith, Carol Paquette, MBC.

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the most current meetings announcements.

Andrew Davenport began the taxonomy portion by presenting images, key characters, and distributional data for the members of the family Ampeliscidae found in the CSD monitoring region. All distribution data presented was CSD data from 1991-2019 and was not intended to represent distribution across the entire Southern California Bight (SCB). Designations of "rare", "very rare", or "extremely rare", or reports of co-occurrence, only reflected the species presence relative to CSD and might not be indicative of other sampling locations.

It was noted during the discussion that keys created for the Amphipoda are typically made relative to the female morphology, but males usually fit into the key. Differences for males are typically evident in the key. Note that in the following list of character states "A" = article and "P" = pereopod, such that A5P7 = article 5 (carpus) of pereopod 7.

AMPELISCIDAE:

Ampelisca indentata J. L. Barnard 1954

- Reported from 30-190m (most common from 50-100m)
- Can co-occur with *Ampelisca pugetica*
- Uropod 1 rami to midpoint of uropod 2
- Dorsal carina of urosomite 1 saddle-shaped (not on males)
- A5P7 with notch on anterior margin
- A6P7 short and thick
- Minute tooth on epimeron 3

Ampelisca pugetica Stimpson 1864

- Reported from 10-465m (most common from 30-120m)
- Can co-occur with *A. indentata*
- Uropod 1 rami reaching to or just beyond uropod 2 peduncle
- Dorsal carina of urosomite 1 saddle-shaped
- A5P7 with notch on anterior margin
- A6P7 long and slender
- Prominent tooth on epimeron 3

Publication Date: July 2023

Ampelisca pacifica Holmes 1908

- Reported from 30-430m (most common from 60-120m)
- Distal tips of uropod 3 broadly rounded

Ampelisca hancocki J. L. Barnard 1954

- Reported from 30-887m (most common from 60-120m; 1 record from 887m during B'08)
- Uropod 2 lacking subapical spine on outer ramus
- Should be noted that the white patch on uropod 1 peduncle can be confused for other species, and therefore not diagnostic
- Hook on epimeron 3, with nearly straight posterior margin
- Dactyl of P7 short and thick

Ampelisca cristata cristata Holmes 1908

- Reported from 10-140m (most common 60-120m)
- Can co-occur with *Ampelisca cristata microdentata*
- Dorsal carina of urosomite 1 tall, rounded and laminar
- Dorsal ridge of pleonite 3 cleft
- Epimeron 2 postero-distal corner square (sub-adults) or with small tooth (adults)

Ampelisca cristata microdentata J. L. Barnard 1954

- Reported from 9-138m (most common 20-40m)
- Can co-occur with *Ampelisca cristata cristata*
- Dorsal carina of urosomite 1 tall, rounded & laminar
- Dorsal ridge of pleonite 3 with a single low ridge
- Epimeron 2 postero-distal corner rounded, tooth absent

Ampelisca brevisimulata J. L. Barnard 1954

- Reported from 10-250m (most common from 20-120m)
- Can co-occur with *Ampelisca* cf. *brevisimulata*
- Paired setae on pereonites 2 and 3
- A2P7 setae transitions dorsally to inserted spines
- Epimeron 2 with acute tooth on postero-distal corner

Publication Date: July 2023

Ampelisca cf brevisimulata SCAMIT 1995 §

- Reported from 10-320m (most common from 20-120m)
- Can co-occur with *A. brevisimulata*
- A2P7 setae does not transition to spines
- Epimeron 2 rounded, without tooth on corner
- Epimeron 3 with large, convex process above tooth

Ampelisca careyi Dickinson 1982

- Reported from 20-327m (most common from 30-60m)
- If deeper than 150m, double check against *Ampelisca unsocalae*
- Head produced anteriorly into dome-shaped process above antenna 1
- Lower front margin not parallel to upper margin
- A5P7 with 1-3 setae
- Epimeron 3 with slight sinuous process above the tooth

Ampelisca unsocalae J. L. Barnard 1960

- Reported from 100-800m; only from Regional Bight surveys; *rare*
- If shallower than 200m, double check against *A. careyi*
- Head not produced into dome-shaped process
- Lower front margin of head nearly straight
- A5P7 with 1-3 setae
- Epimeron 3 with slightly sinuous process above tooth

Ampelisca brachycladus Roney 1990

- Reported from 10-185m (most common from 10-40m)
- Uropod 1 outer ramus ~2X length of inner ramus
- Epimeron 3 without hook

Ampelisca milleri J. L. Barnard 1954

- Reported from 30-130m; only from Regional Bight surveys; *rare*
- No lobe on A4P7
- A4P7 shorter than A3P7
- Epimeron 3 with minute, blunt tooth postero-distally in adults

Ampelisca lobata Holmes 1908

- Reported from 20-120m; only from Regional Bight surveys; *extremely rare*
- Antenna 1 long, reaching end of peduncle of antenna 2
- A4P7 without antero-distal notch
- Posterior lobe of A4P7short, extending less than ½ way down A5P7
- Female uropod 3 inner ramus strongly serrate
- Epimeron 3 without hook

Ampelisca agassizi (Judd 1896)

- Reported from 10-270m (most common from 20-130m)
- Can co-occur with *Ampelisca romigi*
- Posterior lobe of A2P7 broadly rounded
- A6P7 with anterior & posterior margins parallel
- Female inner ramus of uropod 3 not uncinate and distally hooked
- White patch on peduncle of uropod 1

Ampelisca romigi J. L. Barnard 1954

- Reported from 20-220m (mostly found at 80-120m);**uncommon**
- Can co-occur with *A. agassizi*
- Posterior lobe of A2P7 ventrally produced
- A6P7 posterior margin convex
- Female inner ramus of uropod 3 uncinate and distally hooked
- White patch on peduncle of uropod 1

Andrew also has a pictorial key to the *Ampelisca* of the CSD monitoring region. Dean is preparing an updated key to the *Ampelisca* for the entire SCB area.

Don commented on the importance of checking the dactyls of Pereopod 7 to examine the variability between (and within?) species. This would be a good future project to compare all the reported SCAMIT *Ampelisca* spp P7 dactyls.

Andrew then presented images, key characters, and distributional data for the members of the family Phoxocephalidae found in the CSD monitoring region. All distribution data presented was from 1991-2019 CSD data, and does not represent distribution across the entire SCB. Designations of "rare", "very rare", or "extremely rare", or reports of co-occurrence, only reflect the species presence relative to CSD and may not be indicative of other sampling locations.

Andrew began by discussing 2 species that are not Phoxocephalids but contained within the Superfamily Haustorioidea and are visually similar at first glance.

Publication Date: July 2023

Family Platyischnopidae:

Tiburonella viscana (J. L. Barnard 1964)

- Reported from 10-30m
- Rostrum long, cylindrical, with ventral, backwardly directed distal process
- Antenna 2 peduncular articles elongate

Family Urothoidae:

Urothoe elegans Cmplx

- Reported from 60-190m
- Head truncate, rostrum strongly reduced or absent
- Lower anterior portion of head extends forward; looks like a cheek
- Antenna 1 peduncular articles elongate

Family Phoxocephalidae: Subfamily Metharpiniinae:

Foxiphalus golfensis J. L. Barnard & C. M. Barnard 1982

- Reported from 20-160m (most common from 30-60m)
- Rostrum tapers evenly, not constricted
- A2P7 setose
- Epimeron 3 posterior end pointy or blunt, not hooked

Foxiphalus obtusidens (Alderman 1936)

- Reported from 10-190m (most common from 20-60m)
- Rostrum tapers evenly, not constricted
- A2P7 asetose
- Epimeron 3 posterior end pointy or blunt, not hooked and setose
- Gnathopod 2 normal size
- A6G2 only slightly longer than A5G2
- Uropod 1 with flexible subapical nail & displaced peduncular spine
- Setal bundles posterior to middle of telson not obscured by urosomal plate

Foxiphalus similis (J. L. Barnard 1960)

- Reported from 20-160m (most common from 60-120m)
- Rostrum tapers evenly, not constricted
- Epistome long and broad
- Epimeron 3 posterior end pointy or blunt, not hooked

Majoxiphalus major (J. L. Barnard 1960); mentioned but no collection data reported

Metharpinia coronadoi J. L. Barnard 1980

- Reported from 10-60m (mostly common at 30m) **uncommon**
- Rostrum linguiform, constricted/indented
- Epistome blunt
- Uropods 1 & 2 rami tips bearing small, subapical spines dorsally
- Epimeron 3 postero-ventral corner rounded, without hook
- A2P7 with many teeth

Metharpinia jonesi (J. L. Barnard 1963)

- Reported from 10-30m; **uncommon**
- Rostrum linguiform, constricted/indented
- Epistome blunt
- Uropods 1 & 2 rami tips bearing subapical spines dorsally
- Epimeron 3 postero-ventral corner produced into a hook
- A2P7 with many teeth

Rhepoxynius abronius (J. L. Barnard 1960)

- Reported from 10-60m; (most common from 20-30m) **uncommon**
- Rostrum linguiform, constricted/indented
- Epistome acute, longer than basal width
- A2P7 with more than 4 teeth
- Uropod 1 rami spinose
- Epimeron 2 with at least 1 vertically set facial setae out of sequence
- Epimeron 3 postero-ventral corner pointy with a small hook

Rhepoxynius bicuspidatus (J. L. Barnard 1960)

- Reported from 20-250m (most common from 60-110m)
- Rostrum linguiform, constricted/indented
- Epistome small, acute
- Uropods 1 & 2 rami tips not bearing subapical spines
- A2P7 with 2 large spines
- Epimeron 3 postero-ventral corner rounded, without hook

Publication Date: July 2023

Rhepoxynius daboius (J. L. Barnard 1960)

- Reported from 20-250m; (most common from 20-40m) **rare**
- Rostrum linguiform, constricted/indented
- Epistome acutely produced, short
- Uropod 1 without displaced peduncle spine and rami bare
- A2P7 with 3-5 similar sized, small teeth
- A6G1 not elongate, square, smaller than A5G1

Rhepoxynius fatigans (J. L. Barnard 1960)

- Reported from 20-60m; (most common from 20-30m) **uncommon**
- Rostrum linguiform, constricted/indented
- Eyes pixelated
- Epistome acutely produced, short
- Uropod 1 without displaced peduncle spine and rami each with a single spine
- A2P7 with 4 dissimilar teeth and beveled ventral margin
- A6G1 narrow, elongate, rectangular subequal to A5G1

Rhepoxynius heterocuspidatus (J. L. Barnard 1960)

- Recorded from 10-100m (most common from 20-50m)
- Rostrum linguiform, constricted/indented, BROAD
- Epistome small, acute
- Uropods 1 & 2 rami tips not bearing subapical spines
- Spines of uropods 1 & 2 robust, jewel-like
- A2P7 with 4-5 dissimilarly sized teeth

Rhepoxynius stenodes (J. L. Barnard 1960)

- Recorded from 20-120m (most common from 20-40m)
- Rostrum linguiform, constricted/indented, SLENDER
- Epistome blunt
- Uropods 1 & 2 rami tips not bearing small subapical spines
- Spines of uropods 1 & 2 elongate
- A2P7 with 7 or fewer medium/small teeth

Rhepoxynius sp A SCAMIT 1987 §

- Reported from 5-50m; found in Regional Bight surveys; **very rare**
- Rostrum linguiform, constricted/indented
- Epistome acute, longer than basal width
- A2P7 with 2 large spines/teeth

Dany Burgess mentioned that *Rhepoxynius* sp A resembles what they identify as *Rhepoxynius barnardi* Jarrett & Bousfield 1994. It was determined that the *R. barnardi* and *Rhepoxynius* sp A differ by the presence of an acute epistomal cusp on *Rhepoxynius* sp A that is absent on *R. barnardi*. In addition, the pereiopod 7, basis (article 2) upper 'spur' of hind margin is smaller than lower 'spur' on *R. barnardi* (see Jarrett & Bousfield, 1994), whereas the upper 'spur' on P7 basis is larger than the lower 'spur' in *Rhepoxynius* sp A (see SCAMIT toolbox for the *Rhepoxynius* sp A voucher sheet).

Rhepoxynius variatus (J. L. Barnard 1960)

- Reported from 10-180m (most common from 20-40m)
- Rostrum linguiform, constricted/indented
- Epistome acute, longer than basal width
- Uropod 1 rami lacking spines
- A2P7 with 3 medium-large teeth
- Epimeron 3 postero-ventral corner rounded

Dean mentioned some of his work on Washington samples and discussed the differences between *Rhepoxynius variatus* (reported locally) and *R. boreovariatus* Jarrett & Bousfield 1994 (reported from Washington). *R. boreovariatus* has spines present on the rami of uropods 1 and 2, while *R. variatus* **lacks** spines on the rami of uropods 1 and 2.

Rhepoxynius lucubrans (J. L. Barnard 1960)

- Reported from 10-120m (most common from 20-80m); **uncommon**
- Rostrum linguiform, constricted/indented
- Epistome acutely produced, short
- Uropod 1 with displaced peduncular spine
- A2P7 with 4-5 similarly sized teeth
- Lateral facial spines present on urosomite 1

Publication Date: July 2023

Rhepoxynius menziesi J. L. Barnard & C. M. Barnard 1982

- Reported from 10-180m (most common from 20-120m)
- Rostrum linguiform, constricted/indented
- Epistome acute, longer than basal width
- A2P7 with more than 2 teeth
- Uropod 1 with displaced peduncular spine between rami

Dean spoke about his review of the character states of *Rhepoxynius lucubrans*, *R. menziesi*, and *Rhepoxynius* sp D Barnard & Barnard 1982 (which has not been reported by SCAMIT). The key characters he reviewed are in the table below.

Species	Epistome	Mn Molar	Lacinia Mobilis	Urosomite 1
Rhepoxynius menziesi	Long & sharp	Bulbous, R. molar w/ 6 short spines + 1 short spine disjunct	Simple, sharp, broad, like raker	Naked above base
Rhepoxynius lucubrans	Small to medium	Wide plaques, each molar w/ 6 primarily long to medium spines + 1 short, thick spine, strongly disjunct	Simple, sharp, small, like raker	w/4 widely spread, short setae on lateral face
Rhepoxynius sp D	Long & sharp	Bulbous humps, R. molar w/ 6 short spines + 1 short spine strongly disjunct	Deeply bifid, distal bunch little shorter than proximal; narrow proximal branch simple, pointed	w/ 8 large lateral setae in long row on face

As a result of his review, Dean found that many of the specimens show a mix of characters. This led him to believe that the species are likely hybridizing, and they should be referred to as a species complex. This topic will be brought up at the Species List Review Committee meeting to determine the extent of the complex and what will be included within the complex. This could result in a single species complex (*Rhepoxynius lucubrans-menziesi* Cmplx) or as two species complexes (*Rhepoxynius lucubrans* Cmplx and *Rhepoxynius menziesi* Cmplx). Barnard and Barnard (1982) noted that *Rhepoxynius* sp D may be a "gerontic menziesi", i.e., a terminal developmental stage of *R. menziesi*, but goes on to provide a detailed description of the provisional species. The examined specimens were reported from Newport Bay and off Corona del Mar (0-27m). However, the species has not been reported by SCAMIT, but that may be because we have not been looking for it.

Subfamily Brolginae:

Eyakia robusta (Holmes 1908)

- Reported from 50-150m (most common from 80-100m)
- Tends to be crunchy
- A2P7 without setae
- Epimeron 3 with blunt hook that extends anteriorly as a setose lateral flange

Mandibulophoxus gilesi J. L. Barnard 1957

- Reported from 10-20m; **rare**
- Rostrum tapers evenly, not constricted, fingernail-like, distal end not downturned
- Eyes absent
- Base of P5 broadened, with distinct posterior lobe
- A2P7 with 2 small, distal serrations, ventral margin asetose, not extending beyond A3

Paraphoxus sp 1 Jarrett & Bousfield 1994

- Reported from 80-668m; found in Regional Bight surveys; **rare**
- Rostrum tapers evenly, not constricted, fingernail-like
- Eyes present
- Antenna 2, article 1 not ensiform
- Palps of maxilla 1 biarticulate
- Base of P5 broadened, posteriorly expanded, with or without distinct posterior lobe
- Epimeron 3 without oblique rows of robust facial setae
- Epimeron 3 with few or no posterior marginal setae

Subfamily Phoxocephalinae:

Cephalophoxoides homilis (J. L. Barnard 1960)

- Reported from 10-200m; uncommon
- Epistome short or blunt
- Uropod 2 without flexible subapical nail and displaced peduncular spine
- A2P7 asetose
- A6G1about equal to A6G2
- A6G2 much larger than A5G2
- Epimeron 2 ventral margin with 5-6 setae
- Epimeron 3 posterior bottom end blunt, not hooked
- Posterior edge nearly straight with 2 short setae

Publication Date: July 2023

Leptophoxus falcatus icelus J. L. Barnard 1966

- Reported from 300-600m; found in Regional Bight surveys; **rare**
- Rostrum tapers evenly, not constricted, fingernail-like, distal end distinctly downturned
- Eyes absent
- Base of P5 broadened, with distinct posterior lobe
- A2P7 with 2 small distal serrations; ventral margin asetose not extending beyond A3

Metaphoxus frequens J. L. Barnard 1960

- Reported from 10-200m (most common from 80-120m)
- Epistome short or blunt
- A2P7 asetose
- A6G1 shorter than A6G2
- A6G2 much larger than A5G2
- Epimeron 2 ventral margin with 2 setae
- Epimeron 3 posterior bottom end blunt, not hooked
- Posterior edge nearly convex, asetose
- Uropod 2 without subapical nail and displaced peduncular spine
- Coxae 1 & 2 setae inserted across 1/4 to 1/3 of ventral margin

Subfamily Harpiniinae:

Harpiniopsis emeryi J. L. Barnard 1960

- Reported from 300-900m; found in Regional Bight surveys; **very rare**
- Rostrum tapers evenly, not constricted, fingernail-like
- Eyes absent
- Head lacking acute process at lower corner
- Epistome acutely produced
- Base of P5 narrow, not posteriorly expanded, without lobe
- Antenna 2, article 1 not or weakly ensiform
- A2P7 lobed and not flattened antero-distally, asetose
- Epimeron 3 with prolonged hook

Harpiniopsis epistomata J. L. Barnard 1960

- Reported from 400-900m; found in Regional Bight surveys; **rare**
- Rostrum tapers evenly, not constricted, fingernail-like
- Eyes absent
- Epistome strongly produced
- A2P5 narrow, not posteriorly expanded, without lobe
- Antenna 2, article 1 not or weakly ensiform
- A2P7 lobed and not flattened antero-distally, asetose

Harpiniopsis fulgens J. L. Barnard 1960

- Reported from 148-948m; found in Regional Bight surveys; **very rare**
- Rostrum tapers evenly, not constricted, fingernail-like
- Eyes absent
- Head with acute process
- Epistome acutely produced
- A2P5 narrow, not posteriorly expanded, without lobe
- Antenna 2, article 1 not or weakly ensiform
- A2P7 lobed and not flattened antero-distally, asetose
- A2P7 with small teeth along posterior margin
- Epimeron 3 with acute tooth

Harpiniopsis galera J. L. Barnard 1960

- Reported from 98-300m; **very rare**

Harpiniopsis naiadis J. L. Barnard 1960

- Reported from 195-263m; **very rare**

Harpiniopsis profundis J. L. Barnard 1960

- Reported from 887-1023m; found in Regional Bight surveys; **very rare**
- Rostrum tapers evenly, not constricted, fingernail-like
- Eyes absent
- Head with acute process at lower corners
- A2P5 narrow, not posteriorly expanded, without lobe
- Antenna 2, article 1 not or weakly ensiform
- A2P7 base lobed and not flattened antero-distally; asetose base with large posterior spikes or teeth
- Epimeron 3 with acute tooth

Publication Date: July 2023

Heterophoxus affinis (Holmes 1908)

- Reported from 90-850m; **very rare**
- Rostrum tapers evenly
- Eyes present
- Antenna 2, article 1 strongly ensiform
- A6P6 without setae on posterior margin
- A2P7 with bifurcated teeth; setae present
- Epimeron 3 with pointed hook

Heterophoxus ellisi Jarrett & Bousfield 1994

- Reported from 90-850m; **rare**
- Rostrum tapers evenly
- Eyes present
- A6P6 with setae on posterior margin
- A2P7 with unidentate teeth; setae present

Heterophoxus oculatus (Holmes 1908)

- Reported from 20-230m (most common from 40-110m)
- Eyes present (deeper populations without eyes per D. Cadien)
- A6P6 with paired setae on posterior margin, occurring singly or in groups of 2 or 3
- A2P7 with setae
- Epimeron 3 with pointed hook

Per the discussion, *Heterophoxus oculatus* seems to have its range restricted to California. The morphologically similar *H. conlanae* Jarrett & Bousfield 1994 has been reported from California, and is on the Species List (SCAMIT 2021), but its true range is in question and may be limited to the north, either from northern California or from areas even farther north. *H. conlanae* is reported frequently from Washington, where they do not report *H. oculatus*. Genetic analysis will be needed to resolve this range question, therefore please collect these two species in 95% ethanol if the opportunity arises.

Andrew also has a pictorial key to the Phoxocephalidae of the CSD monitoring region. Dean is finalizing an updated key to the Phoxocephalidae for the entire SCB area.

Don commmented that many male Amphipods, and *Ampelisca* in particular, can have some extreme characters in their post-reproductive molts that may confuse the identification process.

Andrew discussed a strange *Pachynus* sp (Family Pakynidae) and detailed the differences between *Pachynus barnardi* Hurley, 1963, and *P. chelatum* Bulyčeva, 1955. *P. barnardi* has eyes and a convex gnathopod. *P. chelatum* lacks eyes and has a flat gnathopod. His current specimen agrees well with *P. chelatum*. This would be a new record for the area, as well as a large range extension. **UPDATE**: In June 2022 Andrew and Dean dissected the mouth parts of the specimen and it was determined to be *P. barnardi.*

Next Andrew discussed a currently unidentified *Chromopleustes* (Family Pleustidae: Subfamily Parapleustinae). This species was found as a parasite on a crab's leg that was caught in a 30m trawl off San Diego. This new species differs from the previously reported *Chromopleustes oculatus* (Holmes 1908) in several characters.

Siena told attendees about her research project in Tom Turner's lab at UC, Santa Barbara. She is investigating the biodiversity of sponge symbionts by collecting amphipods and pericarids from sponges. Do some species have more symbionts? Are the symbionts facultative or obligate? If anyone has interesting Peracarid-Sponge observations or knowledge, she would love to hear from you! She can be reached at: smckim@umail.ucsb.edu.

Andrew then led a discussion reviewing 2 of the provisional species currently residing on the Provisional Species Website:

Protolafystius sp B Tang,2020 § - Order Amphipoda, Family Lafystiidae:
This parasite was found on the body of a California Scorpionfish (*Scorpaena guttata* Girard 1854) and is different than the parasites typically found on the head and face of the fish. The provisional species sheet was deemed to be complete and will move forward in the process of receiving a SCAMIT provisional designation.

Photis sp HYP2 Campbell 2020 § - Order Amphipoda, Family Photidae:
This *Photis* was found in 124m off Santa Rosa Island during Bight '18. The provisional species sheet was deemed complete and will move forward in the process of receiving a SCAMIT provisional designation.

*Note - these vouchers sheets can be pulled from the provisional species website.

A brief group discussion about digital photography was held. Ben left links for microscope mounts that can be used with the camera on your cell phone. Andrew mentioned that most digital cameras have a ¾″ image sensor size. He recommended splurging for the digital cameras that have a 1″ image sensor size. Brent recommended using Helicon Focus (https://www.heliconsoft.com), an inexpensive photo stacking software for creating 3-D images from a series of 2-D photos. After the photos are stacked, they can be manipulated in your favorite photo imaging software without having to pay the Adobe prices for Photoshop.

With that the day wrapped up. Andy and Dean let attendees know that if they have further inquiries about any of the information, species, or materials mentioned they can contact them at: Andrew - adavenport@sandiego.gov, or Dean - deanpasko@yahoo.com.

4 APRIL 2022 SLRC PROVISIONAL SPECIES, ZOOM

Attendees: Wendy Enright, Megan Lilly, Zoë Scott, Ricardo Lara, Veronica Rodriguez, CSD; Brent Haggin, Don Cadien, LACSD; Kelvin Barwick, OCSD; Greg Lyon, Erin Oderlin, CLAEMD; Tony Phillips, DCE.

Kelvin opened the meeting by addressing the question - Will Ed 14 be ready by 2023? Don feels we could make it but Kelvin has doubts. Tony and Brent feel that by the deadline, whatever is done is done, and we publish what we have. Creating the Species List is an open-ended process with changes occurring with each edition. The biggest phylogenetic challenge will be nesting Echiurans and Sipunculans where they are supposed to be, within the Annelids. We have already moved the Echiurans but their final resting place within the polychaetes is still unsure. The

Sipunculans still need to be addressed. It was decided to move towards the goal of July 2023 for Ed 14. Megan talked about getting as many of her ID sheets as she can to the provisional species site in order to share them prior to Bight'23.

Next Kelvin wanted to discuss roles and responsibilities, and asked if he should continue as committee Chair? A resounding yes filled the meeting. Larry is stepping down as an editor, we will need a replacement. As for individual taxa leads – if people don't want to continue or want a change, Kelvin asked that they try to find a replacement.

The ongoing provisional species review was the next topic up for discussion. Kelvin revealed the results thus far. Most of the volunteer reviewers have returned their results. Out of the 352 provisional species listed on Ed 13 (SCAMIT, 2021) all but 80 had been reviewed. Kelvin put the question to the committee of what to do with the results once completed. This led to a discussion about species being covered/addressed in presentations but not subsequently having voucher sheets created. Additionally, some species have been uploaded to the provisional species site but not necessarily shared elsewhere. Kelvin will try to collate and assimilate this information. He asked what should we do for those species that are missing any form of documentation? Don responded that this process allows us to look at things that are undocumented and if there are no strong advocates for retention, move them to an inactive hold file. Wendy noted that we "move them to purgatory". Ricardo suggested the creation of a "recommend or not recommend" column to say whether an animal should be moved to purgatory. Veronica stated that she and Ricardo have moved images or drawings that they found while searching through their polychaete documents, to the provisional species site.

Erin noted that while she has been trained on some of these animals, she has never actually seen them in a sample, and doesn't feel comfortable recommending yes or no with regards to retention on the List. Kelvin encouraged her to reach out to her phyla committee for assistance.

For the next edition of the List, if someone wants a provisional species added they will submit it for consideration to the SLRC committee. The primary editors will have to approve the addition and will ask to see available information for the suggested species. Brent shared the SCAMIT provisional voucher sheet guidelines currently out for review. The guidelines will need to be met prior to inclusion on future editions of the Species List. The circulation criteria for species inclusion have changed since the development of the provisional species site. We will remove newsletter publication as a requirement but noted that all approved species should eventually be published and distributed in the newsletter. Don touted how important it is that we track these provisional species; SCAMIT is the only organization that tries to deal with nonstandard nomenclature so how we do it is important.
UPDATE: The guidelines were officially adopted on June 20, 2022 and can be found at SCAMIT.org on the Toolbox page.

Brent brought up the idea of including the BRI or ITI on the provisional sheet. This led to an extensive discussion about p-codes and who has access/knowledge of their creation. The compromise would be to have the editing committee be part of that process. Ben stated that this will help limit drift and align our regionality. Wendy liked the idea of having a place for it but doesn't feel it necessarily would have to be filled in initially. After it is applied it could be added at a later date. At this point Don and Kelvin warned that the p-code process is easy to misunderstand/abuse, so it would be imperative to have these properly vetted. This led to an action item for Brent to add a place for p-codes in the draft of new provisional species voucher sheet guidelines.

We discussed the database project and an action item for Kelvin developed – he will draft a document (similar to an RFP) and circulate it to the SLRC for feedback.

Don requested that Kelvin send out a set of deadlines leading up to the target publication date. He suggested that old milestones can be used for reference.

11 APRIL 2022, BIVALVIA PART III, TONY PHILLIPS, ZOOM

Attendance: Brent Haggin, Don Cadien, Chase McDonald, Jojo Loan, Terra Petry, LACSD; Kelvin Barwick, OCSD; Wendy Enright, Megan Lilly, Lauren Valentino, CSD; Heather Peterson, Ashley Loveland, Jessica Donald SFPUC; Tony Phillips, DCE; Carol Paquette, MBC; Angelica Zavala Lopez, MTS; Matt Hill, EcoAnalysts; Paul Valentich-Scott, Santa Barbara Museum of Natural History (Retired).

Brent opened the meeting with a few business announcements and afterward we moved right into Tony's presentation - "***Bivalvia of the SCB adult-subadult-juvenile (Part III)***" Tony thanked everyone who allowed him access to, or sent him, voucher specimens. He also promoted Paul's Bivalvia 101 presentation as being very useful and valuable (found in the SCAMIT Toolbox). Paul noted that he has retired but is still willing to help people with bivalve questions.

Following are notes on only a small fraction of Tony's (as usual) excellent and exhaustive presentation (it is available in the SCAMIT Toolbox).

We started with an outlier, *Eucrassatella fluctuata.* The only specimen ever seen by SCAMIT was identified by CSD from B'08, stn 2527, 9 Sept 2008, 42m, near Catalina Island.

Carditidae:

Subfamily Scalaricarditinae:

Cyclocardia bailyi (J.Q. Burch 1944) – the only species Tony feels comfortable with. It has distinctive scalloping across the radial ribs even down to juv sizes. It occurs from 25-275m.

Cyclocardia ventricosa (Gould 1850) - listed as occurring from Alaska to Baja California in 20 - 450m. The ribs extend to the edge vs in *Cyclocardia barbarensis* (Stearns 1890) where the ribs terminate prior to the edge of shell.

Cyclocardia gouldii (Dall 1903) - can't be separated from *C. ventricosa* at small sizes. Paul warned that in deep water the two species can co-occur.

Tony did note that he assumed small specimens (2-3mm) in a sample were same as the adults. However, if a sample contained nothing but small juveniles, they were left at genus.

Use caution as the radial rib count can be variable even though it is listed in species descriptions. Paul chimed in to say there is a real problem with *C. ventricosa* vs *C. gouldii* and that more molecular work is needed to sort it out. Megan chimed in – as functional taxonomists we need a decision before B'23. Kelvin suggested a species complex. Tony will make an effort to get to the Santa Barbara Museum and work with Paul to examine specimens. It was suggested for now the complex would be *Coanicardita ventricosa* Cmplx. Wendy noted that in Vol 37(1) we created a minimum 5mm size limit to identify beyond Family level. She asked if we needed to revisit this convention. It was decided that the size convention should be replaced with *C. ventricosa* Cmplx. However, *C. bailyi* is excluded from this convention since it is felt it can be IDed down to a small size. When in doubt, reference Tony's presentation (the presentation on SCAMIT.org includes these changes).

Tony suggested *Crassicardia crassidens* (Broderip & G. B. Sowerby I 1829) be removed from the SCAMIT List since he has never seen it and found no materials or records during his preparation for this presentation. Tony asked the various agencies to check their historical data for any records of this species. Wendy checked previous editions of the List to see when it was added. It was not in Ed 1 but turned up in Ed 4 (2001). There was some thought it might have been a B'98 record? It is not present in CSD data but waiting to hear from other agencies. Kelvin noted that Coan
(1977) published a paper in the Veliger entitled, *Carditidae of the NE Pacific*, which should be reviewed for further information.

Tony went on to other members of the carditids but stated they are much easier to deal with.

Subfamily Carditamerinae:

Glans carpenteri (Lamy 1922) – found in coarse sediments, usually shallow but described as to 100m; he identified quite a few specimens from Bolsa Chica which is fine sand so there is a bit of a discrepancy.

Subfamily Thecaliinae:

Milneria kelseyi Dall 1916 – there are two species possible and their range is intertidal, riprap so most of us won't see them in agency monitoring samples. The other species *Milneria minima* (Dall 1871) has not been reported by SCAMIT (2021). Paul chimed in with a warning – the image of *M. minima* in the Western North America bivalve book (Coan et al. 2000; pg 306) is in fact *M. kelseyi*.

Lucinidae:

Epilucina californica (Conrad 1837) – shallow water species; Crescent City to Baja California; intertidal to 80m; there is a helpful table in Coan et al 2000.

Parvilucina tenuisculpta (Carpenter 1864) – Being a common species a good size series, juvenile to adult, was presented along with comparison to other morphologically similar Lucinids. *Parvilucina approximata* (Dall 1901) was incorrectly reported from the SCB by Coan et al. (2000).

Don gave an interesting life history note on Lucinids – they can be very inflated if living in anoxic conditions and doing a lot of sulfur oxidizing. Their gills expand to accommodate additional symbiotic bacteria.

Thyasiridae:

Adontorhina cyclia Berry 1947 – Tony has only seen *A. cyclia*, but there are two other species listed in SCAMIT (2021): *Adontorhina lynnae* Valentich Scott 2000 and *Adontorhina sphaericosa* Scott 1986.

Axinodon redondoensis (T. Burch 1941) - Tony recommends using bleach for opening the valves as they are delicate. Attempts to remove any ferruginious material will break the valves. *Axinodon* has a central tubercle in the left valve which is absent in *Adontorhina*.

Mendicula ferruginosa (Forbes 1844) - A deep water species which looks similar to *Axinodon* externally but *Mendicula* lacks a central tubercle in the hinge. Should also should be opened with bleach due to its delicate nature. *weird note about *Mendicula* – as you go deeper, the cardinal teeth disappear.

Thyasira flexuosa (Montagu 1803) – Paul stated that he is working with someone in Japan who feels there might be another valid species. However, that paper won't be out any time soon. Additionally, there is a researcher working on *Thyasira* in the Atlantic who feels we don't have *T. flexuosa* at all. The story will unfold in the future but for now, just stick with *T. flexuosa*

Thyasyridae sp LA1 Cadien 1999 § – collected during B'98. Paul has never seen anything like it and thought it might be a *Mendicula*. The specimen is lost in the bowels of the NHMLAC.

Lasaeidae:

Lasaea adansoni (Gmelin 1791) – found predominantly in rip rap samples. Paul said it seems to be a cosmopolitan species; it is an Atlantic species name. Don noted that it is found in the byssal threads of *Mytlius* which could explain its cosmopolitan distribution.

Kurtiella spp

- Lateral teeth are very distinctive between *Kurtiella coani* (Scott 1998) and *Kurtiella tumida* (Carpenter 1864).
- *Kurtiella grippi* (Dall 1912) - Paul wants wet specimens with full collection data.
- *Kurtiella pedroana* (Dall 1899) – in clean sediments; will never see with ferruginous coating; often seen on the mole crab, *Blepharipoda* and also found on hermit crabs.
- *K. tumida* – opaque and occasionally with ferruginous coating.
- *Kurtiella compressa* (Dall 1913) – The specimen pictured in Coan et al. (2000) are not of this species. Local records for this species have been referred to *Kurtiella* sp D (SCAMIT 1988§) (SCAMIT, 2021). Images of the true *K. compressa* can be found in Coan & Valenitch-Scott's (2012; pg 510) Tropical West America Bivlaves book.
- *Kurtiella* sp LA1 (Power 2004 §) – should probably go on the Hold list; it could be *K.* sp D, but there is no descriptive data at this point.
- *Kurtiella* sp E SCAMIT 1988 § - The original voucher sheet, by Paul, was published in Vol 7(2) of the SCAMIT newsletter, but he now feels it is a synonym of *K. pedroana*. This will be added to the proposals for the next edition of the species list.

There was a discussion about separating small Lasaeids and about the reliability of juvenile IDs. There is some doubt about consistency of effort but overall people feel comfortable.

Pristes oblongus Carpenter 1864 – intertidal; distinctive serrated cardinals; at first glance externally can look like a *Kurtiella* but the hinge is very different; *Kurtiella* doesn't have cardinals.

Rhamphidonta retifera (Dall 1899) – seen in Palos Verdes samples; Megan chimed in that it has been sampled in CSD monitoring, and Wendy confirmed that CSD has recorded 3 specimens from shallow stations since 2005. It can be confused with juv *Kellia suborbicularis* (Montagu

Publication Date: July 2023

1803) but they are fatter and the hinge is different. Don also noted that in *K. suborbicularis* the anterior and posterior margins are parallel whereas in *R. retifera* the anterior and posterior margins are asymmetrical.

Galeommatidae:

Cymatioa electilis (Berry 1963) - distinctive feature is the crenulation of the ventral margin. However, the crenulations are not evident below 4mm and even then it is a difficult character to see as they are just starting to develop. Due to this feature, it was decided that taxonomists should not try to differentiate *Rhamphipdonta* from *Cymatioa* at ≤ 4mm.

Cardiidae:

Clinocardium nuttallii (Conrad 1837) – in juveniles the umbones are central vs posterior in adults; shell pigmentation present or absent.

Americardia biangulata (Broderip & G. B. Sowerby I 1829) - recorded off Catalina Island, California. Tony was unable to find any other locality records for this species.

Laevicardium substriatum (Conrad 1837) – A good size series was presented along with detailed images of the hinge. Paul feels that the other reported species from the SCB, *Laevicardium elatum* (G.B. Sowerby, in Broderip and G.B. Sowerby I 1933) is most likely extinct in the SCB but still extant further south. There is a possibility to see it in the San Diego region. Tony noted that he only ever sees *L. substriatum*. Through his web cam, Kelvin showed a single large empty valve of a dead *L. elatum* from SD Bay and noted it could have been dead for a long time. The two species can be separated by presence or absence of internal shell pigment. *L. substriatum* has pigment and *L. elatum* does not.

We ended the day with Round Table comments/questions:

Heather Petersen talked about the possibility of *Trachycardia* in San Francisco Bay. While far north, with shipping traffic it's possible. It was asked if the radial rib counts are reliable in juveniles? Tony said probably not but a growth series would need to be examined to know for sure.

Don wanted to discuss ferruginous deposits – on small Lasaeids and others, those deposits are a result of a relationship with a symbiotic bacteria that lives on the periostracum of these animals. He feels it would be an interesting study to find out if it is mutualistic. Do clams benefit from having a ferruginous coating? Could it help prevent predation? The bacteria benefit from the respiratory pumping of the bivalve. Tony noted that he has not seen ferruginous coating on *Cymatioa electilis* not even on the umbones. It was pondered if the genesis of ferruginous coating on other phyla, such as sipuncula and anthozoa, could be the result of a different mechanism. We were unable to solve that mystery.

LITERATURE CITED

Barnard, J.L & CM Barnard. 1982. The Genus *Rhepoxynius* (Crustacea: Amphipoda: Phoxocephalidae) in American Seas. Smithsonian Contributions to Zoology, number 357, 49 pages.

Coan, E. V. 1977. Preliminary review of the northwest American Carditidae. Veliger 19: 375-386.

Coan, Eugene V., Paul Valentich Scott, & Frank R. Bernard. 2000. Bivalve Seashells of Western North America: Marine Bivalve Mollusks from Arctic Alaska to Baja California. Santa Barbara Museum of Natural History Monographs Number 2. Santa Barbara Museum of Natural History, Santa Barbara, California. 764pp.

Coan, Eugene and Paul Valentich-Scott. 2012. Bivalve Seashells of Tropical West America. Marine Bivalve Mollusks from Baja California to Northern Perú. Santa Barbara Museum of Natural History Monographs Number 6, Studies in Biodiversity Number 4. Parts I & II. 1258 pp.

Jarrett, N.E. and E.L. Bousfield. 1994a. The Amphipod superfamily Phoxocephaloidea on the Pacific Coast of North America. Family Phoxocephalidae. Part 1. Metharpiniinae, new subfamily. Amphipacifica, Vol. 1(1): 58-140.

SCAMIT. 2021. A Taxonomic Listing of Benthic Macro- and Megainvertebrates from Infaunal & Epifaunal Monitoring and Research Programs in the Southern California Bight, Edition 13. Cadien DB, Lovell LL, Barwick KL, Haggin BM, eds. 203pp. (July 1, 2021)

Publication Date: July 2023

Please visit the SCAMIT Website at: www.scamit.org

SCAMIT OFFICERS

If you need any other information concerning SCAMIT please feel free to contact any of the officers at their e-mail addresses:

President	Brent Haggin	(562)908-4288 x 5672	bhaggin@lacsd.org
Vice-President	Leslie Harris	(213)763-3234	lharris@nhm.org
Secretary	Megan Lilly	(619)758-2336	mlilly@sandiego.gov
Treasurer	Erin Oderlin	(310)648-5477	erin.oderlin@lacity.org

SCAMIT is a 501(c)(3) charity. The newsletter is published every two months and is distributed freely to members in good standing. Membership is $20 for an electronic copy of the newsletter, available via the web site at www.scamit.org, and $35 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $65. All correspondences can be sent to the Secretary at the email address above or to:

SCAMIT
PO Box 50162
Long Beach, CA 90815